JUNE 1983 NUMBER 466 -- Part I

AUG 1 5 1983

Solar-Geophysical Data prompt reports

Data for May 1983, April 1983 & Late Data

Explanation of Data Reports Issued as Number 462 (Supplement) February 1983

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ERRATA: 1982 Sunspot numbers & 10 cm flux	Pages 130-131
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Solar - Geophysical Data

Part I (Prompt Reports)

NO. 466 JUNE 1983

DATA FOR
MAY 1983
APRIL 1983

Michael A. Chinnery, Director
NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

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3	Jan 58 - Dec 58	Microfilm
4	Jan 59 - Dec 59	Microfilm
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7	Jan 62 - Dec 62	Microfilm
8	Jan 63 - Dec 63	Microfilm
9	Jan 64 - Dec 64	Microfilm
10	Jan 65 - Dec 65	Microfilm
11	Jan 66 - Sep 66	Microfilm
12	Oct 66 - Dec 66	Microfilm
13	Jan 67 - Dec 67	Microfilm
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SOLAR-GEOPHYSICAL DATA

No. 466

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

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CODE	KIND OF OBSERVATION	1982 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1983 JAN	FEB	MAR	APR	MAY
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A.2c	American Relative Sunspot Numbers Ra	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11	461A 11	462A 11	463A 9	464A 9	465A 9	466A 11
A.3a	Mt. Wilson Magnetograms	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	461A 58	462A 44	463A 40	464A 38	465A 42	466A 54	
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F.1h	Cosmic Ray Neutron Counts (Thule)	454A131	455A152	456A148	457A153	458A143	459A149	460A119	461A123	462A116	463A101	464A 83	465A 97	466A113	
F.1i	Cosmic Ray Neutron Counts (Kiel)	454A131	457A178	457A178	457A153	458A143	459A149	460A119	461A123	462A116	463A101	464A 83	465A 97	466A113	
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Notes:

"455A 44" listed under 1982 Apr means that the sunspot drawings for Apr 1982 were contained in Solar-Geophysical Data Number 455 - Part 1, beginning on page 44.

A = Part 1, B = Part II.

----- = no data available.
blank = data not yet received.

*Solar radio noise bursts observed at Athens, Learmonth, Manila, Palehua and Sagamore Hill during Aug 1979 through Oct 1980 appear in Solar-Geophysical Data, Number 461, Part II, pages 103-235.

SGD 466 Part I (Prompt)

MAY 1983 DATA

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ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES MAY 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
121	01	30	131	145	024	S11W78	0	0	0	PRESTO TENFLARE 150 FLUX UNITS	01	S11W78	Q	SOLQUIET
						N19W36	0	0	0	30/0800Z DURATION 40 MINUTES		N19W36	Q	MAGQUIET
						N14W35	0	0	0			N14W35	Q	
						S14W30	2	1	0			S14W30	E	
						S15W17	1	0	0			S15W17	E	
						S03W14	0	0	0			S03W14	Q	
						S08E38	0	0	0			S08E38	Q	
						S09E56	4	0	0			S09E56	E	
122	02	01	137	140	023	N14W53	0	0	0		02	N14W53	Q	SOLQUIET
						N19W49	0	0	0			N19W49	Q	MAGALERT
						S15W43	6	1	0			S15W43	Q	MINOR 02/04
						S15W30	4	0	0			S15W30	Q	
						S03W28	0	0	0			S03W28	Q	
						S04W08	0	0	0			S04W08	Q	
						S08E25	0	0	0			S08E25	Q	
						S09E42	10	1	0			S09E42	E	
123	03	02	128	143	015	N14W67	0	0	0		03	N14W67	Q	SOLQUIET
						N19W63	2	0	0			N19W63	Q	MAGALERT
						S15W57	0	0	0			S15W57	Q	MINOR 03/06
						S15W44	0	0	0			S15W44	Q	RECURRENCE
						S03W41	9	0	0			S03W41	E	
						S08E15	0	0	0			S08E15	Q	
						S09E29	8	0	0			S09E29	E	
124	04	03	130	137	012	N14W81	0	0	0		04	N14W81	Q	SOLQUIET
						N19W78	0	0	0			N19W78	Q	MAGALERT
						S15W70	1	0	0			S15W70	E	MINOR 04/06
						S15W57	0	0	0			S15W57	E	RECURRENCE
						S03W54	5	0	0			S03W54	E	
						S08E02	0	0	0			S08E02	Q	
						N13E06	0	0	0			N13E06	Q	
						S09E16	3	0	0			S09E16	E	
125	05	04	125	131	030	S16W83	0	0	0		05	S16W83	Q	SOLQUIET
						S14W71	0	0	0			S14W71	Q	MAGALERT
						S04W67	1	0	0			S04W67	E	MINOR 05/06
						N10W07	1	0	0			N10W07	Q	RECURRENCE
						S10E03	2	0	0			S10E03	E	
						S13E23	1	0	0			S13E23	Q	
						S16E58	0	0	0			S16E58	Q	
126	06	05	137	129	017	S14W86	0	0	0		06	S14W86	Q	SOLQUIET
						S04W81	8	0	0			S04W81	Q	MAGNIL
						S08W26	0	0	0			S08W26	Q	
						N13W21	0	0	0			N13W21	Q	
						S10W10	3	0	0			S10W10	E	
						S12W00	0	0	0			S12W00	Q	
						S14E09	2	0	0			S14E09	E	
						S16E45	0	0	0			S16E45	Q	
						S25E89	1	0	0			S25E89	Q	
127	07	06	099	129	017	N13W33	0	0	0		07	N13W33	Q	SOLQUIET
						S10W24	8	0	0			S10W24	E	MAGQUIET
						S15W06	1	0	0			S15W06	E	
						S28E73	1	0	0			S28E73	E	
						S08E75	0	0	0			S08E75	Q	
128	08	07	120	115	010	N13W47	3	0	0	PRESTO XRAY EVENT X3/2B	08	N13W47	Q	SOLALERT
						S10W38	5	0	0	07/2206Z DURATION 26 MINUTES.		S10W38	E	08/XX
						S15W18	1	0	0	TENFLARE 610 FLUX UNITS 07/2217Z		S15W18	Q	MAGALERT
						S11E16	0	0	0	DURATION 26 MINUTES		S11E16	Q	08/XX
						S09E63	0	0	0			S09E63	Q	
						S30E63	10	1	1			S30E63	A	
129	09	08	140	125	012	N13W62	5	0	0	PRESTO XRAY EVENT X1/3B S31E62	09	N13W62	E	MAJOR FLARE

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES MAY 1983

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S09W51	2	0	0	08/0224Z DURATION 129 MINUTES		S09W51	Q	ALERT 09/XX
						S10W41	1	0	0	TENFLARE 990 FLUX UNITS 08/0246Z		S10W41	Q	25030
						S14W32	0	0	0	DURATION 33 MINUTES, TENFLARE		S14W32	Q	MAGALERT
						S11E03	1	0	0	2700 FLUX UNITS 08/0319Z DURATION		S11E03	Q	09/11
						S30E50	6	0	1	44 MINUTES		S30E50	P	
						S08E51	5	0	0			S08E51	E	
130	10	09	144	125	011	N13W76	2	0	0	PRESTO XRAY EVENT X2/2B S29E39	10	N13W76	Q	MAJOR FLARE
						S10W66	1	0	0	09/2303Z DURATION 36 MINUTES		S10W66	Q	ALERT 10/XX
						S08W58	0	0	0	TENFLARE 310 FLUX UNITS 09/2304Z		S08W58	Q	23731
						S14W48	1	0	0	DURATION 12 MINUTES		S14W48	Q	MAGALERT
						S11W11	0	0	0			S11W11	Q	10/11
						S31E37	8	0	1			S31E37	P	
						S09E39	16	1	0			S09E39	E	
131	11	10	168	140	009	N14W88	2	0	0	PRESTO TENFLARE 130 FLUX UNITS	11	N14W88	Q	MAJOR FLARE
						S09W82	1	0	0	10/1207Z DURATION 11 MINUTES		S09W82	Q	ALERT 11/XX
						S15W62	1	0	0			S15W62	Q	22630
						S11W23	11	1	0			S11W23	E	MAGALERT
						S30E26	6	0	0			S30E26	P	10/12
						S09E27	6	0	0			S09E27	E	
132	12	11	171	165	036	S15W75	0	0	0	PRESTO TENFLARE 110 FLUX UNITS	12	S15W75	Q	MAJOR FLARE
						S11W35	8	3	0	11/0350Z DURATION 30 MINUTES		S11W35	A	ALERT 12/XX
						S08W27	0	0	0	MAGSTORM 11/0731Z		S08W27	Q	33511 AND
						S10E12	3	0	0			S10E12	E	21230
						S30E12	2	1	0			S30E12	A	MAGALERT
						N09E77	0	0	0			N09E77	Q	12/15
133	13	12	175	159	035	S15W91	0	0	0	PRESTO XRAY EVENT S30E15	13	S15W91	Q	MAJOR FLARE
						S11W49	11	1	0	12/0253Z DURATION 25 MINUTES		S11W49	P	ALERT 13/14
						S09W41	8	1	0	TENFLARE 770 FLUX UNITS		S09W41	Q	34911 AND
						S10W01	6	0	0	12/0252Z DURATION 14 MINUTES		S10W01	E	30031
						S31W00	10	1	0			S31W00	A	MAGALERT
						S08E22	0	0	0			S08E22	Q	13/14
						N09E66	6	0	0			N09E66	Q	
134	14	13	163	151	028	S11W61	10	0	0		14	S11W61	A	SOLALERT
						N09W53	2	0	0			N09W53	Q	14/15
						S09W52	4	0	0			S09W52	Q	MAGALERT
						S11W14	3	0	0			S11W14	E	14/15
						S31W14	3	0	0			S31W14	E	
						S09E09	3	0	0			S09E09	Q	
135	15	14	170	153	023	S11W76	12	1	0		15	S11W76	A	SOLALERT
						S10W28	5	0	0			S10W28	E	15/16
						S30W26	2	0	0			S30W26	E	MAGALERT
						S09W04	0	0	0			S09W04	Q	15
						S09E03	0	0	0			S09E03	Q	
						S05E19	0	0	0			S05E19	Q	
						N09E39	2	0	0			N09E39	Q	
						S26E77	0	0	0			S26E77	Q	
136	16	15	176	143	014	S11W89	8	1	1	PRESTO XRAY EVENT X2/2B S11W81	16	S11W89	A	SOLALERT 16
						S12W41	2	0	0	15/0839Z DURATION 59 MINUTES		S12W41	E	MAGNIL
						S31W39	0	0	0	TENFLARE 4000 FLUX UNITS		S31W39	E	
						S10W18	1	0	0	15/0923Z DURATION 53 MINUTES		S10W18	Q	
						S09W12	0	0	0			S09W12	Q	
						S05E04	0	0	0			S05E04	Q	
						S09E24	1	0	0			S09E24	Q	
						N14E47	0	0	0			N14E47	Q	
						S27E66	1	0	0			S27E66	Q	
						S23E76	0	0	0			S23E76	Q	
137	17	16	124	133	012	S12W54	0	0	0		17	S12W54	E	SOLALERT 17
						S29W52	4	0	0			S29W52	E	MAGALERT
						S10W33	2	0	0			S10W33	Q	17/18
						S08W27	0	0	0			S08W27	Q	
						N08E11	0	0	0			N08E11	Q	

ALERT PERIODS
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NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	EVENTS
						S28E54	1	0	0			S28E54	Q	
						S24E64	0	0	0			S24E64	Q	
138	18	17	153	130	035	S11W68	3	0	0	PRESTO MAGSTORM 17/0022Z	18	S11W68	E	SOLNIL
						S29W63	0	0	0			S29W63	Q	MAGALERT
						S10W45	1	0	0			S10W45	Q	18/XX
						S08W40	0	0	0			S08W40	Q	
						S20W38	0	0	0			S20W38	Q	
						N09W03	0	0	0			N09W03	Q	
						N13E07	0	0	0			N13E07	Q	
						S28E40	1	0	0			S28E40	Q	
						S24E53	0	0	0			S24E53	E	
						N17E78	4	0	0			N17E78	E	
139	19	18	139	134	014	S11W81	0	0	0	PRESTO TENFLARE 190 FLUX	19	S11W81	Q	SOLQUIET
						S28W76	1	0	0	UNITS 18/1809Z DURATION 23		S28W76	Q	MAGNIL
						S10W59	0	0	0	MINUTES		S10W59	Q	
						S08W54	0	0	0			S08W54	Q	
						S20W49	0	0	0			S20W49	Q	
						N09W16	0	0	0			N09W16	Q	
						N12W09	0	0	0			N12W09	Q	
						S27E25	1	0	0			S27E25	Q	
						S23E40	2	0	0			S23E40	E	
						N17E65	15	0	0			N17E65	E	
140	20	19	157	143	012	S11W94	0	0	0		20	S11W94	Q	SOLQUIET
						S28W89	0	0	0			S28W89	Q	MAGQUIET
						S09W72	1	0	0			S09W72	Q	
						S08W67	0	0	0			S08W67	Q	
						S21W64	0	0	0			S21W64	Q	
						N10W28	0	0	0			N10W28	Q	
						N11W21	0	0	0			N11W21	Q	
						S27E12	1	0	0			S27E12	Q	
						S24E27	1	0	0			S24E27	E	
						N18E51	12	0	0			N18E51	E	
141	21	20	157	149	008	S09W91	0	0	0		21	S09W91	Q	SOLALERT
						S21W77	0	0	0			S21W77	Q	21/XX
						N09W45	1	0	0			N09W45	Q	MAGALERT
						N10W36	0	0	0			N10W36	Q	21/23
						S26W00	0	0	0			S26W00	Q	RECURRENCE
						S24E14	0	0	0			S24E14	Q	
						N17E38	8	0	0			N17E38	E	
						S15E47	0	0	0			S15E47	Q	
						S17E70	2	0	0			S17E70	Q	
142	22	21	131	146	025	N10W58	1	0	0		22	N10W58	Q	SOLALERT
						S26W13	0	0	0			S26W13	Q	22/XX
						S24E01	0	0	0			S24E01	Q	MAGALERT
						N18E25	9	0	0			N18E25	E	MINOR 22/XX
						S14E33	0	0	0			S14E33	Q	
						S17E58	2	0	0			S17E58	Q	
143	23	22	152	148	028	N10W66	0	0	0		23	N10W66	Q	SOLALERT
						S26W26	2	0	0			S26W26	Q	23/XX
						N18E11	9	0	0			N18E11	E	MAGALERT
						S24W11	0	0	0			S24W11	Q	23/XX
						S16E16	0	0	0			S16E16	Q	
						S17E45	1	0	0			S17E45	Q	
						S17E52	5	0	0			S17E52	Q	
144	24	23	174	140	030	N10W79	4	0	0		24	N10W79	Q	SOLNIL
						S05W53	1	0	0			S05W53	Q	MAGNIL
						S26W39	0	0	0			S26W39	Q	
						S24W25	0	0	0			S24W25	Q	
						S13W23	0	0	0			S13W23	Q	
						N18W02	7	0	0			N18W02	E	
						S16E28	0	0	0			S16E28	Q	
						S17E38	4	0	0			S17E38	Q	

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INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
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NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						N15E50	0	0	0			N15E50	Q	
						N12E71	0	0	0			N12E71	Q	
145	25	24	153	137	042	S05W67	0	0	0	PRESTO STRONG MAGSTORM BEGAN	25	S05W67	Q	SOLQUIET
						S27W51	0	0	0	24/1600Z		S27W51	Q	MAGALERT
						S23W41	0	0	0			S23W41	Q	25/XX
						N18W16	3	0	0			N18W16	Q	
						S15E07	0	0	0			S15E07	Q	
						S17E15	0	0	0			S17E15	Q	
						S17E25	2	0	0			S17E25	Q	
						N15E37	0	0	0			N15E37	Q	
						N11E57	0	0	0			N11E57	Q	
146	26	25	170	135	014	S06W81	0	0	0		26	S06W81	Q	SOLQUIET
						S27W64	0	0	0			S27W64	Q	MAGALERT
						S22W53	0	0	0			S22W53	Q	25/XX
						S13W19	0	0	0			S13W19	Q	
						S07W02	0	0	0			S07W02	Q	
						S17E03	0	0	0			S17E03	Q	
						S17E12	6	0	0			S17E12	Q	
						N17E23	0	0	0			N17E23	Q	
						N18E29	6	0	0			N18E29	E	
						N17E66	0	0	0			N17E66	Q	
147	27	26	175	129	009	S27W77	0	0	0		27	S27W77	Q	SOLQUIET
						S22W67	0	0	0			S22W67	Q	MAGNIL
						N17W44	3	0	0			N17W44	Q	
						S13W33	0	0	0			S13W33	Q	
						N20W27	0	0	0			N20W27	Q	
						S09W16	1	0	0			S09W16	Q	
						S17W10	0	0	0			S17W10	Q	
						S17W02	2	0	0			S17W02	Q	
						S05E02	0	0	0			S05E02	Q	
						N16E07	0	0	0			N16E07	Q	
						N13E35	2	0	0			N13E35	Q	
						N17E53	0	0	0			N17E53	Q	
						S09E68	0	0	0			S09E68	Q	
148	28	27	166	127	015	S27W90	0	0	0		28	S27W90	Q	SOLQUIET
						S22W81	0	0	0			S22W81	Q	MAGQUIET
						N17W59	0	0	0			N17W59	Q	
						S13W45	2	0	0			S13W45	Q	
						S12W36	0	0	0			S12W36	Q	
						S08W30	2	0	0			S08W30	Q	
						S05W18	0	0	0			S05W18	Q	
						S17W14	1	0	0			S17W14	Q	
						S03W10	0	0	0			S03W10	Q	
						N15W07	1	0	0			N15W07	Q	
						S10E52	1	0	0			S10E52	Q	
						S09E61	1	0	0			S09E61	Q	
149	29	28	114	130	009	N17W74	0	0	0		29	N17W74	Q	SOLQUIET
						S12W70	0	0	0			S12W70	Q	MAGQUIET
						S09W42	0	0	0			S09W42	Q	
						S17W27	1	0	0			S17W27	Q	
						N15W17	0	0	0			N15W17	Q	
						S10E39	1	0	0			S10E39	Q	
						S09E48	4	0	0			S09E48	Q	
150	30	29	155	135	005	N16W88	0	0	0		30	N16W88	Q	SOLQUIET
						S09W58	0	0	0			S09W58	Q	MAGQUIET
						S07W44	0	0	0			S07W44	Q	
						S18W43	1	0	0			S18W43	E	
						N17W29	0	0	0			N17W29	Q	
						N09W07	0	0	0			N09W07	Q	
						S10E16	0	0	0			S10E16	Q	
						S11E25	2	0	0			S11E25	Q	
						S09E34	3	0	0			S09E34	Q	
						S09E72	4	0	0			S09E72	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
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NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
151	31	30	114	130	007	S09W74	0	0	0		31	S09W74	Q	SOLQUIET
						S18W58	1	0	0			S18W58	E	MAGALERT
						N09W22	0	0	0			N09W22	Q	MINOR 31/01
						S10E02	0	0	0			S10E02	Q	RECURRENCE
						S12E12	0	0	0			S12E12	Q	
						S10E21	0	0	0			S10E21	Q	
						S12E64	6	0	0			S12E64	E	
152	01	31	086	134	016	S18W71	1	0	0		01	S18W71	E	SOLALERT
						S13W01	0	0	0			S13W01	Q	MAGALERT
						S10E07	3	0	0			S10E07	Q	
						S11E52	12	1	0			S11E52	A	

NO=MESSAGE SERIAL NUMBER, DI=DATE OF ISSUE, DO=DATE OF OBSERVATION, WOLF=WOLF NUMBER, 10CM=10CM SOLAR FLUX, A=A INDEX, LOC=LOCATION LAT-LONG, TOT=TOTAL NUMBER OF FLARES, M=NUMBER OF M FLARES, X=NUMBER OF X FLARES, DA=DATE OF FORECAST, DE=DESCRIPTION, Q=QUIET, E=ERUPTIVE, A=ACTIVE, P=PROTON.

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
MAY 1983

PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

01 MAY 1983 TOYOKAWA 01/0015Z TENFLARE 150 FLUX UNITS 30/0800Z DURATION 40 MINUTES
07 MAY 1983 BOULDER 07/2340Z XRAY EVENT X3/2B S30E67 07/2206Z DURATION 26 MINUTES
07 MAY 1983 BOULDER 07/2340Z TENFLARE 610 FLUX UNITS 07/2217Z DURATION 26 MINUTES
08 MAY 1983 TOYOKAWA 08/0018Z TENFLARE 980 FLUX UNITS 07/2216Z DURATION 20 MINUTES
08 MAY 1983 TOYOKAWA 08/0413Z TENFLARE 2670 FLUX UNITS 08/0243Z DURATION 80 MINUTES
08 MAY 1983 BOULDER 08/0510Z XRAY EVENT X1/3B S31E62 08/0224Z DURATION 129 MINUTES
08 MAY 1983 BOULDER 08/0510Z TENFLARE 990 FLUX UNITS 08/0246Z DURATION 33 MINUTES
08 MAY 1983 BOULDER 08/0510Z TENFLARE 2700 FLUX UNITS 08/0319Z DURATION 44 MINUTES
09 MAY 1983 BOULDER 09/2359Z XRAY EVENT X2/2B S29E39 09/2303Z DURATION 6 MINUTES
09 MAY 1983 BOULDER 09/2359Z TENFLARE 310 FLUX UNITS 09/2304Z DURATION 12 MINUTES
10 MAY 1983 TOYOKAWA 10/0130Z TENFLARE 500 FLUX UNITS 09/2300Z DURATION 30 MINUTES
10 MAY 1983 BOULDER 10/1406Z TENFLARE 130 FLUX UNITS 10/1207Z DURATION 11 MINUTES
11 MAY 1983 TOYOKAWA 11/0540Z TENFLARE 110 FLUX UNITS 11/0350Z DURATION 30 MINUTES
12 MAY 1983 KAKIOKA 12/0130Z MAGSTORM 11/0713Z
12 MAY 1983 BOULDER 12/0355Z XRAY EVENT M5/3B S30E15 12/0253Z DURATION 25 MINUTES
12 MAY 1983 BOULDER 12/0355Z TENFLARE 770 FLUX UNITS 12/0252Z DURATION 14 MINUTES
12 MAY 1983 SYDNEY 12/0400Z SOFLARE LEARMONTH M5/3B S30E15 START 0252Z MAXIMUM 0256Z. TYPE II AND IV. 770 FLUX UNITS AT 2695 MHZ.
12 MAY 1983 TOYOKAWA 12/0410Z TENFLARE 800 FLUX UNITS 12/0250Z DURATION 20 MINUTES
15 MAY 1983 BOULDER 15/1000Z XRAY EVENT X2/2B S11W81 15/0839Z DURATION 59 MINUTES
15 MAY 1983 BOULDER 15/1000Z TENFLARE 4000 FLUX UNITS 15/0841Z DURATION 53 MINUTES
15 MAY 1983 TOYOKAWA 15/1100Z TENFLARE 1800 FLUX UNITS 15/0839Z DURATION 41 MINUTES
18 MAY 1983 KAKIOKA 18/0030Z MAGSTORM 17/0022Z
18 MAY 1983 BOULDER 18/1926Z TENFLARE 190 FLUX UNITS 18/1809Z DURATION 23 MINUTES
24 MAY 1983 BOULDER 24/2145Z STRONG MAGSTORM BEGAN 24/1600Z
25 MAY 1983 KAKIOKA 25/0100Z MAGSTORM 24/1238Z

INTERNATIONAL* (Ri) RELATIVE SUNSPOT NUMBERS

Day	1982 Final Jun	Jul	Aug	Sep	Oct	Nov	Dec	1983 Final Jan	Feb	Mar	1983 Prov Apr	May
01	70	50	55	115	132	80	88	60	103	109	.56	114
02	83	41	68	124	164	88	125	65	85	93	70	104
03	94	33	68	146	143	75	132	55	88	86	62	94
04	104	42	81	176	120	100	137	63	94	93	53	85
05	111	39	97	160	109	100	137	82	82	113	36	95
06	108	32	128	141	55	76	174	103	71	88	49	88
07	115	33	144	117	54	98	175	109	72	77	61	92
08	127	42	150	115	55	86	184	126	63	68	55	93
09	142	61	161	94	54	102	152	100	39	74	59	110
10	147	110	155	81	88	109	166	83	26	55	64	121
11	138	146	157	86	87	112	171	90	21	49	69	101
12	144	187	138	78	92	83	194	77	18	32	61	114
13	139	219	113	81	98	98	172	89	11	12	64	132
14	137	222	100	104	88	116	160	92	10	24	64	125
15	125	246	100	129	71	116	166	77	24	44	53	130
16	128	263	86	133	65	100	140	89	17	63	63	99
17	136	272	93	127	54	108	118	102	22	74	63	93
18	134	270	105	107	33	117	102	86	32	88	75	99
19	134	234	97	117	56	122	79	93	33	82	103	88
20	139	192	77	104	70	118	63	81	32	82	90	105
21	143	138	79	102	95	131	87	74	39	87	87	110
22	146	99	90	95	100	141	88	73	33	70	83	104
23	116	74	71	97	128	120	96	59	40	66	97	96
24	112	27	79	109	145	96	100	58	50	60	104	111
25	92	25	101	118	142	75	122	75	67	48	118	106
26	94	29	98	138	135	73	116	77	70	70	106	115
27	49	22	115	133	131	71	126	75	88	72	131	90
28	36	19	132	132	103	74	120	89	98	48	136	68
29	32	23	134	144	101	82	98	99		44	122	88
30	38	38	144	160	96	76	79	101		54	137	75
31		60	120		73		69	110		37		60
Mean	110	106	108	119	95	98	127	84	51	66	80	100

*International sunspot numbers have replaced the Zurich values since January 1981.
The yearly mean sunspot number equaled 115.9 in 1982.

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	Jun 82	Jul	Aug	Sep	Oct	Nov	Dec	Jan 83	Feb	Mar	Apr	May
01	134.2	106.5	123.4	184.3*	205.2	159.6	167.8	131.4	162.6	145.4	100.7	142.0
02	135.1	106.9	138.2*	168.7*	209.4*	154.5	166.3	131.4	156.5*	138.7	101.2	145.4
03	141.5	109.4	153.5*	171.0*	197.0A	147.4	181.6	136.2	145.5	141.0	101.4*	139.4
04	158.2*	111.5	167.3	188.1*	182.3*	143.4	194.5	138.2	156.8	143.7	100.8	132.9
05	156.6*	114.1	180.9	179.4	163.9	136.4	195.9*	154.6	154.3*	146.6	98.7	130.8
06	149.6*	121.3	201.2	172.1	151.9	142.1	210.4	161.6*	152.3	139.3	99.5	125.8*
07	158.6*	128.2*	219.6	176.8	140.2	142.3	244.3	163.3	142.2	132.3	102.2	117.4
08	167.5	150.3*	217.5*	178.5	136.9	144.8	241.7*	155.9*	133.3	128.1	104.1*	127.0
09	177.4	176.6*	212.5	179.2	137.4	147.5A	258.6	150.0	121.9	122.0	106.1	132.2*
10	196.0*	203.5*	209.5	165.6	134.8	152.9	273.5*	144.2	113.4	115.1	103.3	143.5*
11	224.2	226.4*	205.0*	158.3	137.3	154.1	259.3*	139.3	106.9	103.0	104.4	159.3*
12	238.3*	239.7*	195.2*	152.5*	136.4	164.9	251.1	135.7	99.8	99.5*	107.7	160.4*
13	240.2	252.6*	182.9*	151.3	143.9	161.2	239.0	135.1	95.5	95.8	109.1	154.4
14	240.8	269.2*	176.8	147.4	140.4	159.5	235.6	137.2	91.7	95.9	111.7	153.5*
15	235.8	274.0	173.0	149.0*	134.1	157.0*	221.9	141.0	88.5	100.6*	103.6	145.7
16	210.6*	269.4*	161.4	147.3	129.8	163.3	213.2*	140.2	89.7	107.8	105.1	134.0*
17	206.0*	273.3	165.1	147.0*	130.1	158.0	200.5*	138.0	91.9	114.5	113.5	131.7*
18	200.7*	247.2*	166.4*	143.2	132.8	170.2*	186.5	134.8	97.2	117.7	120.7	137.6
19	207.5	234.7	159.2	142.6*	136.7	182.3	176.8*	127.4	94.6	118.3	125.0	146.8
20	207.1	196.5	144.7	146.9	146.2*	189.2	159.2	120.5	97.3	120.7	127.4	151.8*
21	210.7	173.7*	138.6	145.4	161.4	200.9	149.4	116.1	101.6	118.8*	133.3	149.8
22	197.2*	149.5*	138.8	146.2	168.2	231.1*	150.1*	113.5	106.2	117.2	139.7	152.0
23	187.3	128.5	141.2	152.6*	177.3*	196.1	157.0*	115.4	112.0	116.2	140.4	143.7
24	168.2	117.8	142.9	165.4*	190.9	172.9	166.8	114.1	114.3	117.1	142.7	140.5
25	159.1*	108.2	158.5	170.3	196.8*	164.8	170.6	122.7	120.3	114.2*	145.6	138.8
26	142.3	102.1	166.4	187.3	193.5	168.8*	168.7	132.6	126.2	114.7*	146.8	132.3
27	127.6	97.8	180.4	191.4	187.7*	158.6	166.2	133.6	138.3	109.6	149.6	130.5
28	123.1	96.4	181.4	196.9	181.4	160.3*	157.0	140.6	137.6	104.9	156.4*	133.1
29	111.7	97.5	183.4	204.6	170.9*	161.4	147.3	148.9		98.9	148.4	139.0
30	108.5	112.4	174.5	202.4	166.7	164.8	142.5	154.8		100.7	147.2	135.4*
31		114.4	175.0*		165.1		134.4	161.9		98.7		138.0*
Mean	177.4	164.8	172.1	167.1	160.9	163.7	193.2	137.7	119.6	117.3	119.9	140.2

A = interpolated value.
*Adjusted for burst in progress at time of measurement.
The yearly mean 2800 MHz flux adjusted to 1 AU equaled 175.1 in 1982.

DAILY SOLAR INDICES

MAY 1983

Day	Julian Day	Bartels Cycle Day	Sunspot Numbers R_I	Sunspot Numbers $R_{A'}$	Obs Flux Ottawa (2800)	Solar Flux Adjusted to 1 Astronomical Unit: SGMR (15400)	SGMR (8800)	SGMR (4995)	Ottawa (2800)	SGMR (2695)	SGMR (1415)	SGMR (606)	SGMR (410)	SGMR (245)
01	121	20	114	106	139.8	570	267	162	142.0	129	123	88	35	18
02	122	21	104	102	143.1	---	---	---	145.4	---	---	--	--	--
03	123	22	94	90	137.1	521	283	166	139.4	121	117	73	33	20
04	124	23	85	82	130.7	---	---	---	132.9	---	---	--	--	--
05	125	24	95	86	128.5	568	271	151	130.8	118	110	86	35	20
06	126	25	88	78	123.6*	581	283	154	125.8*	119	116	87	37	16
07	127	26	92	93	115.2	571	247	142	117.4	111	106	82	34	29
08	128	27	93	97	124.6	571	271	155	127.0	119	110	83	34	17
09	129	1	110	116	129.7*	578	276	160	132.2*	133	109	80	32	14
10	130	2	121	108	140.7	579	286	176	143.5*	149	116	80	36	17
11	131	3	101	105	156.2*	570	304	194	159.3*	178	128	84	57	70
12	132	4	114	118	157.1*	595	315	198	160.4*	143	127	97	52	82
13	133	5	132	130	151.2	575	297	180	154.4	145	120	89	49	71
14	134	6	125	134	150.2*	601	298	184	153.5*	146	125	66	34	43
15	135	7	130	124	142.6	640	286	166	145.7	132	125	91	36	19
16	136	8	99	97	131.0*	565	280	157	134.0*	128	116	84	36	17
17	137	9	93	100	128.7*	---	---	---	131.7*	---	---	--	--	--
18	138	10	99	99	134.4	585	284	165	137.6	125	121	89	37	18
19	139	11	88	80	143.4	592	281	172	146.8	129	124	94	38	21
20	140	12	105	114	148.2*	579	279	183	151.8*	133	126	96	38	19
21	141	13	110	104	146.1	576	272	173	149.8	138	130	90	38	32
22	142	14	104	109	148.3	580	281	175	152.0	141	132	77	35	65
23	143	15	96	100	140.1	550	273	166	143.7	134	126	102	34	19
24	144	16	111	102	136.9	579	276	160	140.5	129	127	106	35	19
25	145	17	106	86	135.3	583	---	---	138.8	---	---	96	36	17
26	146	18	115	87	128.8	569	267	156	132.3	123	123	92	38	17
27	147	19	90	70	127.1	524	259	151	130.5	125	117	74	34	17
28	148	20	68	71	129.6	574	269	159	133.1	123	122	88	34	18
29	149	21	88	84	135.2	562	265	165	139.0	131	117	89	33	17
30	150	22	75	71	131.7*	---	---	---	135.4*	---	---	74	32	18
31	151	23	60	67	134.2*	585	---	172	138.0*	128	116	90	34	20
Mean			100	97	137.1	575	279	167	140.2	132	120	87	37	28

*Adjusted for burst in progress at time of measurement.

Numbers in parentheses in the column headings denote frequencies in MHz.
Equipment problems produced the gaps shown here in the Air Weather Service's Sagamore Hill observations.
The International and American sunspot numbers represent provisional values.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

May 1983

Date	RELATIVE SUNSPOT NUMBERS: Zurich or Internat (R_I) Monthly Mean	Zurich or Internat (R_I) Smoothed	American (R_A) Monthly Mean	American (R_A) Smoothed	Derived (R_S) Monthly Mean	Derived (R_S) Smoothed	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Monthly Mean	2800 MHz RADIO FLUX Adjusted to 1 AU (S_a) Smoothed
Mar 79	138.0	136	132.5	128	136.7	128	184.0	176
Apr	101.5	141	95.8	133	127.0	133	175.0	180
May	134.4	147	121.8	139	120.4	139	168.9	186
Jun	149.5	153	136.4	144	138.9	144	186.0	191
Jul	159.4	155	140.5	145	123.1	145	171.4	192
Aug	142.2	155	125.1	144	129.2	145	177.0	192
Sep	188.4	156	184.0	143	156.5	144	202.3	191
Oct	186.2	158	178.2	144	171.7	145	216.4	192
Nov	183.3	162	176.5	149	182.9	149	226.8	196
Dec	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140	154.3	146	152.1	157	198.2	203
Aug	158.7	141	170.4	147	182.1	158	226.0	203
Sep	167.3	143	174.5	148	177.7	158	221.9	204
Oct	162.4	142	157.0	146	178.6	156	222.8	202
Nov	137.5	139	138.8	142	157.6	151	203.3	197
Dec	150.1	138	145.0	140	155.5	149	201.4	195
Jan 82	111.1	137	110.4	139	124.2	148	173.4	195
Feb	163.6	133	161.0	134	163.6	144	208.9	191
Mar	153.8	129	155.5	130	163.0	139	208.3	186
Apr	122.0	124	121.9	124	113.9	134	162.9	182
May	82.2	120	82.6	120	97.7	129	147.9	177
Jun	110.4	117	113.5	118	129.6	127	177.4	175
Jul	106.1	115	113.3	117	116.0	125	164.8	174
Aug	107.6	109	110.5	111	123.9	120	172.1	168
Sep	118.8	101	117.8	103	118.5	112	167.1	161
Oct	94.7	96*	90.1	97	111.8	106	160.9	155
Nov	98.1	95*	3.2	93	114.8	103	163.7	153
Dec	127.0	91(3)*	145.0	89	146.7	99	193.2	---
Jan 83	84.3	86(6)*	82.8	84	86.7	94	137.7	---
Feb	51.0	83(8)*	53.4	81	67.2	90	119.6	---
Mar	66.5	81(9)*	60.5	79	64.7	88	117.3	---
Apr	79.7†	79(12)*	74.5	77	67.5	86	119.9	---
May	100.2†	76(15)*	---	74	86.1	82	137.1	---
Jun	---	72(17)*	---	71	---	78	---	---
Jul	---	71(19)*	---	69	---	76	---	---
Aug	---	69(21)*	---	68	---	75	---	---
Sep	---	68(23)*	---	67	---	74	---	---
Oct	---	69(24)*	---	67	---	75	---	---
Nov	---	69(24)*	---	67	---	76	---	---

*An asterisk marks either a value of the observed 12-month running mean or of a predicted 12-month average that is based in part on preliminary observations.

Boldface entries indicate predicted values and parentheses enclose the absolute value of the 90% confidence limits. All tabulated entries of the American sunspot number are final values. The two columns headed "Derived" represent a sunspot number computed from a linear regression equation between the 2800 MHz solar flux (adjusted to 1 astronomical unit) and the Zurich sunspot number.

†International numbers replaced the Zurich values in January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	119	117	115	109	101	96	95	91 (3)
1983	86 (6)	83 (8)	81 (9)	79 (12)	76 (15)	72 (17)	71 (19)	69 (21)	68 (23)	69 (24)	69 (24)	68 (25)
1984	67 (25)	64 (25)	60 (25)	56 (27)	54 (28)	54 (29)	53 (29)	51 (29)	49 (29)	46 (28)	44 (27)	42 (27)
1985	41 (27)	40 (26)	39 (25)	39 (25)	38 (25)	36 (24)	34 (23)	33 (22)	33 (21)	32 (22)	31 (23)	31 (23)
1986	30 (24)	28 (24)	27 (24)	25 (23)	23 (22)	21 (22)	19 (21)	17 (20)	17 (19)	16 (17)	16 (16)	15 (14)

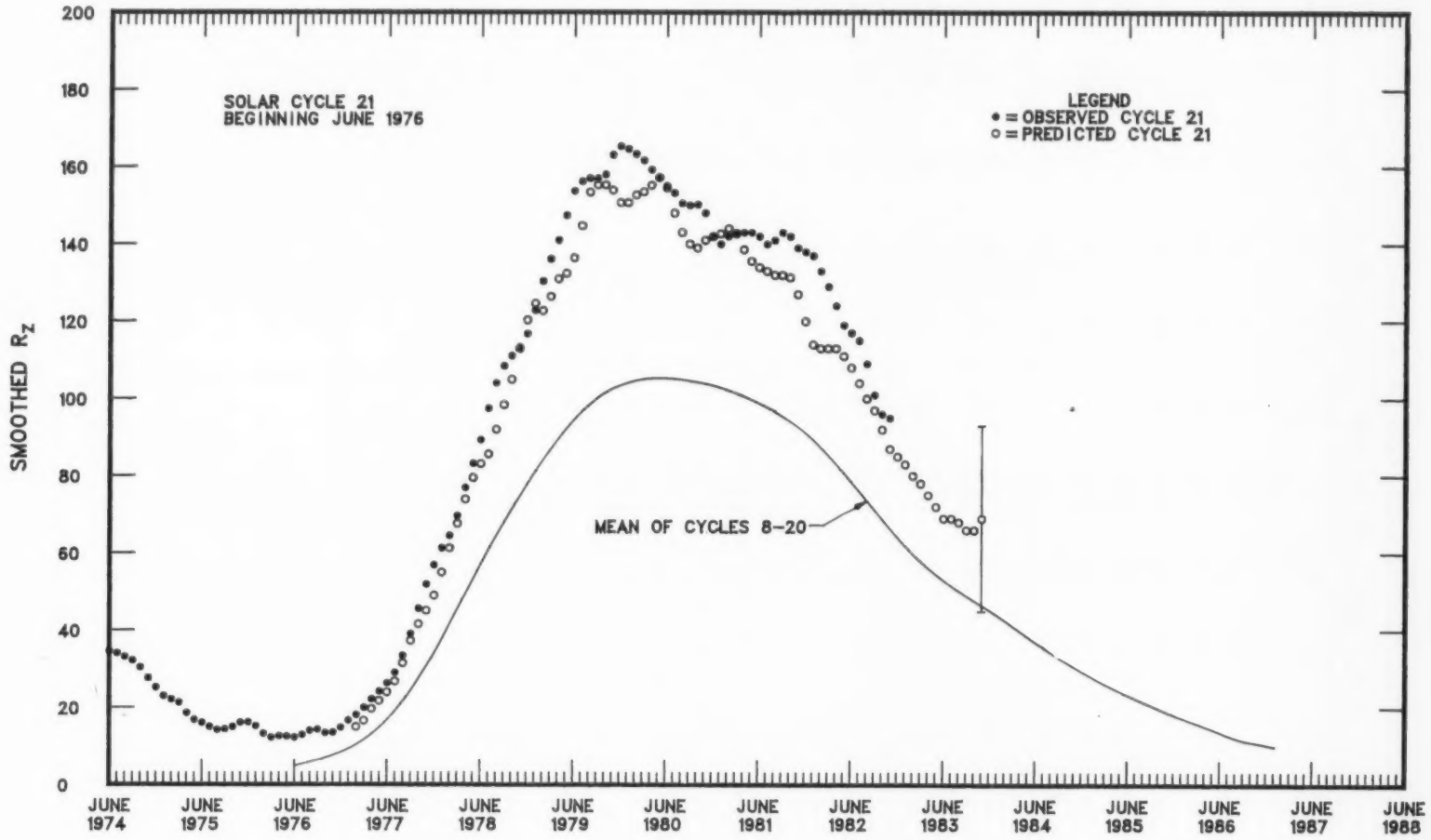
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final international numbers through March 1983, and on provisional international numbers thereafter. Some table entries after the June 1976 value will change slightly, when we incorporate final data for 1983.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 9 in the February 1983 edition of the "Solar-Geophysical Data" supplement.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval. Consider, for example, the November 1983 prediction tabulated above. There exists a 90% chance that in November 1983 the actual smoothed sunspot number will fall somewhere between 45 and 93.

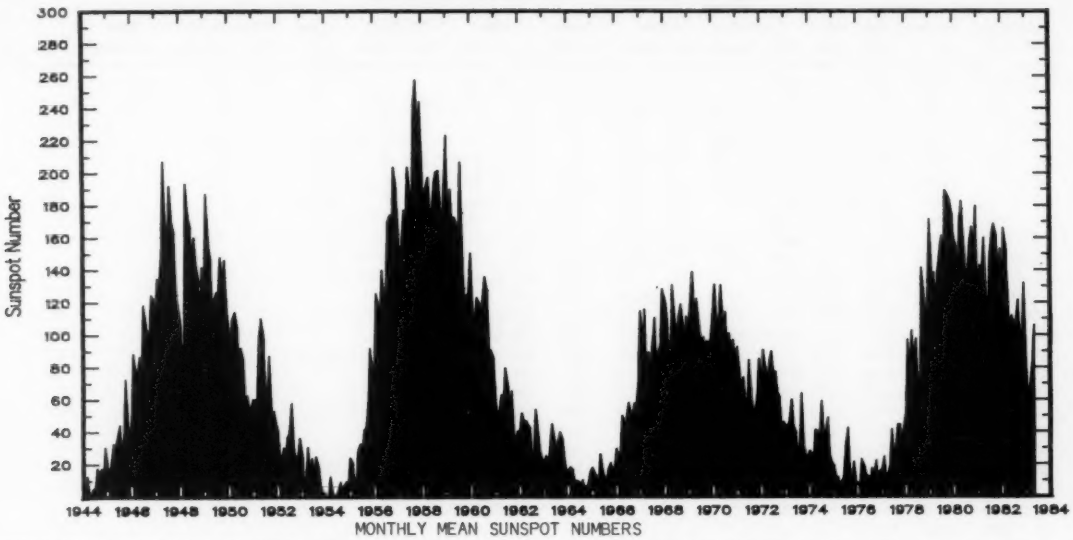
THE MCNISH-LINCOLN PREDICTION METHOD GENERATES USEFUL ESTIMATES OF SMOOTHED SUNSPOT NUMBERS FOR NO MORE THAN 12 MONTHS AHEAD. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In "Solar-Geophysical Data," issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



MONTHLY MEAN SUNSPOT NUMBERS
January 1944 – May 1983



MONTHLY MEAN SUNSPOT NUMBERS

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1944	3.7	0.5	11.0	0.3	2.5	5.0	5.0	16.7	14.3	16.9	10.8	28.4
1945	18.5	12.7	21.5	32.0	30.6	36.2	42.6	25.9	34.9	68.8	46.0	27.4
1946	47.6	86.2	76.6	75.7	84.9	73.5	116.2	107.2	94.4	102.3	123.8	121.7
1947	115.7	133.4	129.8	149.8	201.3	163.9	157.9	188.8	169.4	163.6	128.0	116.5
1948	108.5	86.1	94.8	189.7	174.0	167.8	142.2	157.9	143.3	136.3	95.8	138.0
1949	119.1	182.3	157.5	147.0	106.2	121.7	125.8	123.8	145.3	131.6	143.5	117.6
1950	101.6	94.8	109.7	113.4	106.2	83.6	91.0	85.2	51.3	61.4	54.8	54.1
1951	59.9	59.9	55.9	92.9	108.5	100.6	61.5	61.0	83.1	51.6	52.4	45.8
1952	40.7	22.7	22.0	29.1	23.4	36.4	39.3	54.9	28.2	23.8	22.1	34.3
1953	26.5	3.9	10.0	27.8	12.5	21.8	8.6	23.5	19.3	8.2	1.6	2.5
1954	0.2	0.5	10.9	1.8	0.8	0.2	4.8	8.4	1.5	7.0	9.2	7.6
1955	23.1	20.8	4.9	11.3	28.9	31.7	26.7	40.7	42.7	58.5	89.2	76.9
1956	73.6	124.0	118.4	110.7	136.6	116.6	129.1	169.6	173.2	155.3	201.3	192.1
1957	165.0	130.2	157.4	175.2	164.6	200.7	187.2	158.0	235.8	253.8	210.9	239.4
1958	202.5	164.9	190.7	196.0	175.3	171.5	191.4	200.2	201.2	181.5	152.3	187.6
1959	217.4	143.1	185.7	163.3	172.0	168.7	149.6	199.6	145.2	111.4	124.0	125.0
1960	146.3	106.0	102.2	122.0	119.6	110.2	121.7	134.1	127.2	82.8	89.6	85.6
1961	57.9	46.1	53.0	61.4	51.0	77.4	70.2	55.9	63.6	37.7	32.6	40.0
1962	38.7	50.3	45.6	46.4	43.7	42.0	21.8	21.8	51.3	39.5	26.9	23.2
1963	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9
1964	15.3	17.7	16.5	8.6	9.5	9.1	3.1	9.3	4.7	6.1	7.4	15.1
1965	17.5	14.2	11.7	6.8	24.1	15.9	11.9	8.9	16.8	20.1	15.8	17.0
1966	28.2	24.4	25.3	48.7	45.3	47.7	56.7	51.2	50.2	57.2	57.2	70.4
1967	110.9	93.6	111.8	69.5	86.5	67.3	91.5	107.2	76.8	88.2	94.3	126.4
1968	121.8	111.9	92.2	81.2	127.2	110.3	96.1	109.3	117.2	107.7	86.0	109.8
1969	104.4	120.5	135.8	106.8	120.0	106.0	96.8	98.0	91.3	95.7	93.5	97.9
1970	111.5	127.8	102.9	109.5	127.5	106.8	112.5	93.0	99.5	86.6	95.2	83.5
1971	91.3	79.0	60.7	71.8	57.5	49.8	81.0	61.4	50.2	51.7	63.2	82.2
1972	61.5	88.4	80.1	63.2	80.5	88.0	76.5	76.8	64.0	61.3	41.6	45.3
1973	43.4	42.9	46.0	57.7	42.4	39.5	23.1	25.6	59.3	30.7	23.9	23.3
1974	27.6	26.0	21.3	40.3	39.5	36.0	55.8	33.6	40.2	47.1	25.0	20.5
1975	18.9	11.5	11.5	5.1	9.0	11.4	28.2	39.7	13.9	9.1	19.4	7.8
1976	8.1	4.3	21.9	18.8	12.4	12.2	1.9	16.4	13.5	20.6	5.2	15.3
1977	16.4	23.1	8.7	12.9	18.6	38.5	21.4	30.1	44.0	43.8	29.1	43.2
1978	51.9	93.6	76.5	99.7	82.7	95.1	70.4	58.1	138.2	125.1	97.9	122.7
1979	166.6	137.5	138.0	101.5	134.4	149.5	159.4	142.2	188.4	186.2	183.3	176.3
1980	159.6	155.0	126.2	164.1	179.9	157.3	136.3	135.4	155.0	164.7	147.9	174.4
1981	114.0	141.3	135.5	156.4	127.5	90.9	143.8	158.7	167.3	162.4	137.5	150.1
1982	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.7	98.1	127.0
1983	84.3	51.0	66.5	79.7*	100.2*							

*Provisional

H - ALPHA SOLAR FLARES

MAY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	01	0010	0015	0023	S12	E55				13	SN	B 9.0		C		59		
LEAR	01	0054	0055	0058	S15	W14	4162	04	30.0	4	SF		3	C		23		
LEAR	01	0118	0118	0140	S10	E57	4165	05	5.3	22	SF		3	C		24		K
LEAR	01	0118	0128	0140	S10	E57	4165	05	5.3	22	SF		3	C		38		K
LEAR	01	0157	0157	0203	S15	W19	4162	04	29.6	6	SF	B 8.0	3	C		47		
LEAR	01	0218	0257	0342	S11	E52	4165	05	5.0	84	1B	C 8.7	3	C		355		F
PEKG	01	0258	0302	0315D	S12	E53		05	5.1	17D	1N	C 8.7		P	0302	231	3.9	U
MANI	01	0258	0258	0318	S11	E52		05	5.0	20	2B		1	V		350	5.7	F
LEAR	01	0300	0301	0307	S11	W05	4161	04	30.7	7	SF		3	C		34		
LEAR	01	0326	0329	0344	S14	W33	4154	04	28.6	18	SF		3	C		32		
LEAR	01	0354	0404	0422	S10	E56	4165	05	5.4	28	SF	C 1.3	3	C		59		
LEAR	01	0457	0458	0505	S14	W21	4162	04	29.6	8	SF		3	C		26		
LEAR	01	0600	0601	0605	S11	E50	4165	05	5.0	5	SN	C 1.4	3	C		34		U
LEAR	01	0611	0614	0619	S11	E50	4165	05	5.0	8	SN	C 1.1	3	C		25		
PEKG	01	0617	0626	0638	S11	E51		05	5.1	21	SN			P	0626	67	1.1	E
LEAR	01	0621	0629	0649	S11	E50	4165	05	5.0	28	SN	C 1.4	3	C		37		U
LEAR	01	0712	0720	0824	S14	W33	4154	04	28.8	72	1N	C 4.7	3	C		289		F
PEKG	01	0715	0722	0759	S12	W34		04	28.7	44	SN	C 4.7		P	0722	80	1.0	E
MANI	01	0716E	0720	0827	S15	W34		04	28.7	71D	1N		1	V		270	3.5	F
KAND	01	0908	0910	0918D	S11	E54		05	5.4	10D	SB			C		21	.4	D
LEAR	01	0908	0910	0916D	S09	E53	4165	05	5.4	8D	1F	C 2.5	3	C		180		
MANI	01	0908	0910	0936D	S10	E53		05	5.4	28D	1N		1	V		157	2.6	
GOES	01	1003	1021	1040	S12	E55				37	SN	C 1.6		C		59		
GOES	01	1201	1206	1212						11		C 1.2						
GOES	01	1436	1443	1449						13		C 1.4						
GOES	01	1523	1525	1533						10		C 2.0						
GOES	01	1537	1549	1555						18		C 2.1						
GOES	01	1604	1615	1620						16		C 1.3						
GOES	01	1643	1649	1700						17		C 1.4						
HOLL	01	1709E	1725	1745D	S09	E44	4165	05	5.0	36D	SF		3	C		106		
HOLL	01	1715	1718	1736	S13	W28	4162	04	29.6	21	SN	C 1.0	3	C		54		F
GOES	01	1834	1844	1926			4165			52		C 5.8						
PALE	01	1845E	1845U	1921D	S07	E49	4165	05	5.5	36D	1B	C 5.8	3	C		400		ZE
HOLL	01	1937	1959	2036	S15	W37	4154	04	29.0	59	SF		2	C		162		F
HOLL	01	2045	2053	2054D	S16	W38	4154	04	29.0	9D	1N	C 7.4	2	C		312		F
HOLL	01	2058E	2111U	2207D	S27	W26		04	29.8	69D	SF		2	C		64		F
PEKG	01	2314E	2321	2400D	S16	W38		04	29.1	46D	2N	M 2.9		P	2321	463	6.1	U
MANI	01	2328E	2328	0006	S17	W38		04	29.1	38D	1N		1	V		310	4.2	F
LEAR	01	2336E	2342U	0112	S17	W34	4154	04	29.4	96D	2N	M 2.9	2	C		493		UF
LEAR	02	0159	0203	0224	S11	E36	4165	05	4.8	25	SF		3	C		69		F
LEAR	02	0333	0335	0341	S09	E44	4165	05	5.5	8	SF		3	C		26		
LEAR	02	0350	0356	0409	S09	E44	4165	05	5.5	19	SN	C 1.3	3	C		48		
LEAR	02	0512	0513	0516	S11	E39	4165	05	5.2	4	SF		3	C		35		
LEAR	02	0553	0556	0610	N18	W53	4160	04	28.2	17	SF	C 1.8	3	C		21		F
LEAR	02	0636	0652	0725	S11	E32	4165	05	4.7	49	SF		3	C		20		
LEAR	02	0748	0800	0813	S09	E42	4165	05	5.5	25	SF	C 1.1	3	C		53		
LEAR	02	0836	0839	0845	N18	W54	4160	04	28.2	9	SF		3	C		29		
LEAR	02	0845	0913	0913D	S03	W33	4157	04	29.9	28D	SF		3	C		43		
GOES	02	1015	1032	1041						26		C 2.3						
GOES	02	1109	1112	1115						6		C 2.7						
GOES	02	1208	1214	1218						10		C 4.0						
HOLL	02	1323	1328	1349	S02	W34	4157	04	30.0	26	SF		3	C		62		F
HOLL	02	1350	1355	1400	S04	W31	4157	04	30.3	10	SF		3	C		50		
HOLL	02	1351	1355	1404	S11	E34	4165	05	5.1	13	SF		3	C		33		F
HOLL	02	1407	1407	1417	S03	W36	4157	04	29.9	10	SF	C 1.8	3	C		20		F
HOLL	02	1422	1430	1444	S03	W36	4157	04	29.9	22	SF	C 1.9	3	C		58		
GOES	02	1539	1548	1555						16		C 3.1						
GOES	02	1556	1558	1603						7		C 7.8						
HOLL	02	1603E	1628U	1702	S03	W37	4157	04	29.9	59D	SF		3	C		71		F
HOLL	02	1715	1728	1748D	S03	W37	4157	04	30.0	33D	SN	C 1.9	3	C		99		F
PALE	02	1727	1728	1731	S04	W39	4157	04	29.8	4	SF	C 1.9	3	C		28		
GOES	02	1931	1934	1937						6		C 2.2						
HOLL	02	2013	2025	2025D	S02	W41	4157	04	29.8	12D	SB	C 3.3	3	C		171		
GOES	02	2118	2121	2123						5		C 1.7						
GOES	02	2323	2326	2328						5		C 1.0						
LEAR	03	0012	0014	0037	S20	W51	4154	04	29.1	25	SN	C 4.5	3	C		76		F
HOLL	03	0012	0014	0038	S18	W53	4154	04	29.0	26	SN	C 4.5	2	C		69		F
MANI	03	0013	0013	0035	S03	W42		04	29.9	22	SF		1	V		50	.7	
PEKG	03	0015E	0015	0045	S19	W52		04	29.0	30D	SN	C 4.5		P	0015	118	2.0	E

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
MANI	03	0015	0017	0042	S19	W52		04	29.0	27	1B			1	V		200	3.4	F
LEAR	03	0058	0116	0141	S11	E30	4165	05	5.3	43	SN	C	2.0	3	C		63		F
MANI	03	0058	0110	0141	S11	E30		05	5.3	43	SF			1	V		64	.8	F
HOLL	03	0102	0104	0119	S03	W41	4157	04	30.0	17	SN			2	C		21		F
LEAR	03	0103	0103	0118	S03	W40	4157	04	30.1	15	SN			3	C		27		
MANI	03	0103	0116	0132	S03	W41		04	30.0	29	SF			1	V		20	.3	F
GOES	03	0150	0153	0155						5		C	1.9						
LEAR	03	0356	0400	0410	S11	E29	4165	05	5.3	14	SF			3	C		93		
LEAR	03	0402	0406	0417	S03	W43	4157	04	30.0	15	SF	C	1.3	3	C		42		
LEAR	03	0433	0433	0446	S02	W45	4157	04	29.8	13	SF	C	2.0	3	C		53		
LEAR	03	0536	0539	0548	S11	E28	4165	05	5.3	12	SF			3	C		21		
GOES	03	0723	0726	0729						6		C	1.3						
CATA	03	0840E	0840	0840D	S08	E28		05	5.5	6D	S				P	0840	84	1.0	
GOES	03	0935	1001	1004						29		C	2.0						
KAND	03	1110	1113	1136	S12	E26		05	5.4	26	SF				C		21	.2	E
GOES	03	1114	1119	1124						10		C	1.3						
GOES	03	1218	1228	1235						17		C	1.0						
KAND	03	1301	1304	1312	S09	E27		05	5.6	11	SF				C		33	.4	E
GOES	03	1305	1308	1313						8		C	1.4						
GOES	03	1613	1621	1627						14		C	1.1						
HOLL	03	2049	2051	2111	S03	W51	4157	04	30.1	22	SF	C	1.0	3	C		21		F
GOES	03	2137	2151	2202						25		C	2.2						
GOES	04	0358	0410	0418						20		C	1.1						
GOES	04	0442	0446	0450						8		C	1.2						
LEAR	04	0521	0536	0605	S02	W55	4157	04	30.1	44	SF	C	2.1	3	C		45		
GOES	04	1118	1125	1150						32		C	1.3						
GOES	04	2352	2356	2400						8		C	1.0						
PALE	05	0004E	0008U	0101D	S04	W68	4157	04	29.9	57D	SN	C	4.2	3	C		74		K
PALE	05	0004E	0020	0101D	S04	W68	4157	04	29.9	57D	SN	C	8.2	3	C		86		K
LEAR	05	0005	0006	0114	S03	W67	4157	04	30.0	69	SB	C	4.2	3	C		64		FEK
LEAR	05	0005	0021	0114	S03	W67	4157	04	30.0	69	1B	C	8.2	3	C		153		K
HOLL	05	0004	0005	0112	N01	W69	4157	04	29.8	68	SB			3	C		52		FEK
HOLL	05	0004	0020	0112	N01	W69	4157	04	29.8	68	1N			3	C		112		K
LEAR	05	0129	0130	0149	S11	E01	4165	05	5.1	20	SF			3	C		37		
LEAR	05	0158	0200	0203	S14	E21	4168	05	6.7	5	SF			3	C		30		
LEAR	05	0324	0338	0404	S02	W70	4157	04	29.9	40	SN	C	3.9	3	C		64		F
GOES	05	0444	0448	0452						8		C	1.3						
GOES	05	0514	0521	0524						10		C	2.6						
LEAR	05	0600	0601	0614	S03	W71	4157	04	29.9	14	1N	C	2.0	3	C		141		
GOES	05	0656	0659	0703						7		C	1.1						
LEAR	05	0711	0712	0719	S01	W73	4157	04	29.8	8	SN	C	1.9	3	C				
LEAR	05	0722	0724	0736	S02	W71	4157	04	30.0	14	SF			3	C		25		
GOES	05	0746	0749	0810						24		C	1.8						
YUNN	05	0809	0811	0814D	S25	E88		05	12.2	5D	1N				P		94		A
GOES	05	0853	0856	0858						5		C	2.1						
GOES	05	0910	0917	0920						10		C	4.6						
RAMY	05	1144	1151	1208	S14	E16	4168	05	6.7	24	SF	C	1.8	3	C		38		
GOES	05	1356	1401	1407						11		C	4.7						
HOLL	05	1431	1432	1442	S01	W77	4157	04	29.9	11	SN	C	2.2	3	C		26		
GOES	05	1503	1508	1517						14		C	1.2						
GOES	05	1612	1615	1618						6		C	1.3						
GOES	05	1741	1745	1757						16		C	1.8						
GOES	05	1856	1904	1921			4157			25		C	3.4						
HOLL	05	1916	1917	1923	N00	W80	4157	04	29.8	7	SN			3	C		20		
HOLL	05	1919	1919	1922	S10	W09	4165	05	5.1	3	SF			3	C		40		
GOES	05	2005	2009	2014						9		C	3.7						
HOLL	05	2139	2141	2152	S09	W09	4165	05	5.2	13	SF			3	C		58		F
PALE	05	2256	2257	2305	S28	E89		05	12.9	9	SN	C	4.3	3	C		33		
LEAR	06	0002	0008	0053	S10	W12	4165	05	5.1	51	SF			3	C		65		
GOES	06	0129	0131	0136						7		C	2.5						
MANI	06	0242E	0245	0251	S25	E88		05	12.9	9D	SN			1	V				
GOES	06	0318	0321	0326						8		C	4.0						
PEKG	06	0402	0405	0409	S07	W19		05	4.7	7	SN				C	0405	63	.7	E
LEAR	06	0403	0406	0422	S08	W18	4165	05	4.8	19	SN			3	C		47		
LEAR	06	0603	0610	0624	S10	W20	4165	05	4.7	21	SN			3	C		52		F
MANI	06	0603	0613	0625	S10	W19		05	4.8	22	SN			1	V		45	.5	
PEKG	06	0612E	0612E	0625	S10	W21		05	4.7	13D	SN				P	0612	46	.5	E
YUNN	06	0615E	0615U	0616	S11	W20		05	4.8	1D	SF				P	0615	79	.9	

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	06	0649	0653	0656						7		C 3.9						
LEAR	06	0750	0750	0803	S10	W21	4165	05	4.7	13	SF		3	C		25		F
GOES	06	0917	0921	0928						11		C 1.8						
GOES	06	0942	0946	0953						11		C 1.6						
RAMY	06	1055	1103	1121	S11	W21	4165	05	4.9	26	SN	C 1.8	3	C		62		
GOES	06	1337	1357	1400						23		C 2.2						
HOLL	06	1353	1412	1448	S10	W26	4165	05	4.6	55	SF		3	C		81		H
GOES	06	1447	1504	1515						28		C 2.3						
RAMY	06	1528	1533	1601	S10	W22	4165	05	5.0	33	SN		3	C		57		
HOLL	06	1528	1533	1556	S09	W23	4165	05	4.9	28	SN		3	C		73		F
RAMY	06	1607	1613	1632	S10	W21	4165	05	5.1	25	SF		3	C		74		
HOLL	06	1609	1611	1618	S10	W20	4165	05	5.2	9	SF		3	C		22		F
PALE	06	2216	2217	2250D	S15	W03	4168	05	6.7	34D	SF		3	C		27		
GOES	06	2340	2344	2354						14		C 1.1						
PALE	07	0129	0134	0203	S26	E77	4171	05	13.0	34	SN	C 1.8	3	C		33		
LEAR	07	0131	0138	0201	S27	E75	4171	05	12.9	30	SF	C 1.8	3	C				
PALE	07	0251	0251	0300	S09	W27	4165	05	5.1	9	SF		3	C		27		
LEAR	07	0310	0311	0323	S09	W29	4165	05	5.0	13	SF	C 1.0	3	C		36		
PEKG	07	0333	0335	0339	S09	W33		05	4.7	6	SF			C	0335	50	.6	D
LEAR	07	0333	0334	0339	S10	W32	4165	05	4.7	6	SN		3	C		50		
CATA	07	0615E	0615	0620	S35	E77		05	13.4	5D	1			P	0615	56		
CATA	07	0740	0740	0755	S29	E75		05	13.2	15	1			C	0740	112		
LEAR	07	0743	0746	0811	S28	E72	4171	05	12.9	28	SB	M 1.0	3	C				
PEKG	07	0745	0747	0755	S29	E73		05	13.0	10	SN	M 1.0		C	0747	38		E
GOES	07	1036	1047	1054						18		M 1.2						
CATA	07	1040	1045	1045D	S36	E74		05	13.4	5D	1			P	1045	112		
RAMY	07	1103	1129	1227	S28	E71	4171	05	13.0	84	SF		3	C		32		K
RAMY	07	1103	1147	1227	S28	E71	4171	05	13.0	84	SN		3	C		28		K
HOLL	07	1449	1502	1510	S09	W37	4165	05	4.8	21	SF		3	C		30		
HOLL	07	1524	1524	1532	S29	E71	4171	05	13.2	8	SN		3	C		14		S
RAMY	07	1529	1534	1535	S28	E71	4171	05	13.2	6	SF		3	C		11		
HOLL	07	1539	1541	1548	S29	E69	4171	05	13.1	9	SN	C 1.9	3	C		10		
HOLL	07	1714	1716	1727	S29	E68	4171	05	13.0	13	SB	C 4.2	3	C		44		
HOLL	07	1759	1759	1808	S09	W35	4165	05	5.1	9	SF		3	C		28		
HOLL	07	1905	1920	1930D	S29	E66	4171	05	13.0	25D	1B		3	C		94		K
HOLL	07	1905	1927	1930D	S29	E66	4171	05	13.0	25D	1B	C 8.0	3	C		108		ZFK
HOLL	07	2014	2022	2028	S29	E66	4171	05	13.0	14	SF	C 1.4	3	C		49		
PALE	07	2103	2107	2114	N14	W47	4167	05	4.3	11	SF		3	C		38		
HOLL	07	2107	2107	2113	N15	W50	4167	05	4.1	6	SF		3	C		42		
HOLL	07	2143	2148	2159	N13	W49	4167	05	4.2	16	SF		3	C		34		
HOLL	07	2208	2208	2231	S15	W24	4168	05	6.1	23	SN		3	C		37		F
MANI	07	2216	2216	2305	S30	E67		05	13.2	49	2B		1	V		550	11.6	MZ
HOLL	07	2216	2220	2300	S29	E68	4171	05	13.3	44	2B	X 3.1	3	C		546		Z
PALE	07	2218	2220	2304	S31	E68	4171	05	13.3	46	2B	X 3.1	3	C		559		ZE
PALE	07	2258	2300	2309	N14	W48	4167	05	4.3	11	SF		3	C		17		
HOLL	07	2310	2310	2317	S30	E63	4171	05	12.9	7	SN		3	C		25		F
HOLL	07	2359	0005	0102	S12	W29	4170	05	5.8	63	SN		3	C		142		F
LEAR	08	0002	0005	0054	S13	W25	4170	05	6.1	52	SF		3	C		90		FH
MANI	08	0003	0005	0034	S13	W28		05	5.9	31	SN		1	V		55	.6	F
PALE	08	0003	0005	0045	S12	W26	4170	05	6.0	42	SF	C 1.9	3	C		43		F
PEKG	08	0010	0012	0022	S12	W28		05	5.9	12	SF			C	0012	105	1.2	E
LEAR	08	0224	0224	0913D	S31	E62	4171	05	13.0	409D	SF		3	C		60		K
LEAR	08	0224	0317	0913D	S31	E62	4171	05	13.0	409D	3B	X 1.3	3	C		851		ZUK
PEKG	08	0225	0226	0231	S30	E62		05	13.0	6	SF			C	0226	126		F
LEAR	08	0247	0250	0302	S17	E18	4169	05	9.5	15	SF		3	C		42		
YUNN	08	0248E	0248U	0251	N15	W50		05	4.3	3D	SN			P	0248	94	1.6	
MANI	08	0250	0300	0513	S30	E62		05	13.0	143	2B		1	V		455	9.4	FU
MANI	08	0250	0308	0513	S30	E62		05	13.0	143	3B		1	V		730	15.1	FU
YUNN	08	0255	0324	0416D	S30	E62		05	13.0	81D	4B			P		1383	32.8	U
PALE	08	0255	0303	0403D	S31	E59	4171	05	12.8	68D	2B		3	C		755		K
PALE	08	0255	0325	0403D	S31	E59	4171	05	12.8	68D	3B		3	C		887		ZUK
PEKG	08	0257	0305	0448	S31	E61		05	12.9	111	2N			C	0305	223	5.2	FKU
PEKG	08	0257	0315	0448	S30	E60		05	12.8	111	2B			C	0315	463	10.8	FU
LEAR	08	0505	0508	0513	S11	E15	4173	05	9.3	8	SF		3	C		29		
LEAR	08	0629	0648	0653	N12	W53	4167	05	4.3	24	SF		3	C		19		
LEAR	08	0656	0657	0711	N14	W54	4167	05	4.2	15	SF		3	C		26		
LEAR	08	0724	0727	0739	S09	E64	4172	05	13.1	15	SF		3	C		35		
CATA	08	0725E	0725	0725D	S32	E55		05	12.7	15D	2			P	0725	337	6.7	
HOLL	08	1453	1456	1517	N16	W56	4167	05	4.4	24	SN		3	C		19		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	08	1735	1737	1742	S11	E59	4172	05	13.2	7	SF		3	C		29		
HOLL	08	1900	1901	1905	N13	W58	4167	05	4.4	5	SF		3	C		17		
HOLL	08	1913	1921	1933	S28	E54	4171	05	13.0	20	SN	C 2.1	3	C		39		
PALE	08	1922	1923	1927	S29	E55	4171	05	13.1	5	SF	C 2.1	3	C		23		
HOLL	08	1951	1952	2003	S29	E53	4171	05	13.0	12	SN	C 1.9	3	C		65		F
PALE	08	1952	1954	2000	S30	E54	4171	05	13.1	8	SN	C 1.9	3	C		107		
PALE	08	1959	2010	2028	S11	E55	4172	05	13.0	29	SF		3	C		44		
PALE	08	2227	2230	2247	S08	W55	4165	05	4.8	20	SF		3	C		18		K
PALE	08	2227	2236	2247	S08	W55	4165	05	4.8	20	SF	C 1.2	3	C		25		K
GOES	08	2249	2252	2254						5		C 1.8						
MANI	08	2300	2300	2312	S10	E54		05	13.0	12	SF		1	V		20	.3	
PALE	08	2300	2303	2306	S10	E54	4172	05	13.0	6	SF		3	C		24		
HOLL	08	2313	2314	2324	N17	W61	4167	05	4.3	11	SF		3	C		40		
MANI	08	2314	2314	2324	N13	W62		05	4.3	10	SF		1	V		45	.9	
PALE	08	2314	2315	2324	N13	W62	4167	05	4.3	10	SF		3	C		50		
PALE	08	2315	2316	2325	S09	W55	4165	05	4.8	10	SF		3	C		51		
LEAR	08	2340	0003	0029	S10	E55	4172	05	13.1	49	SF		3	C		150		
PALE	09	0003	0003	0008	S12	E53	4172	05	13.0	5	SF		3	C		42		
MANI	09	0004	0004	0008	S12	E53		05	13.0	4	SF		1	V		40	.7	
LEAR	08	2340	0017	0044	S28	E52	4171	05	13.0	64	1N	C 1.3	3	C		156		
MANI	08	2340	0018	0037D	S28	E52		05	13.0	57D	1N		1	V		154	2.7	F
PALE	09	0015	0017	0024	S30	E51	4171	05	13.0	9	SN		3	C		88		F
HOLL	09	0015	0016	0022	S29	E50	4171	05	12.9	7	SN		3	C		71		F
LEAR	09	0029	0029	0048	S14	W32	4168	05	6.6	19	SF		3	C		23		
LEAR	09	0035	0036	0046	N15	W61	4167	05	4.4	11	SF		3	C		17		
HOLL	09	0036	0037	0048	N17	W64	4167	05	4.2	12	SF		3	C		14		
PALE	09	0037	0040	0045	N16	W62	4167	05	4.3	8	SF		3	C		60		
HOLL	09	0109	0112	0124	S10	E52	4172	05	13.0	15	SF	C 2.3	3	C		37		F
PALE	09	0130	0133	0136	S12	E52	4172	05	13.0	6	SF		3	C		96		F
PALE	09	0155	0159U	0212	S12	E53	4172	05	13.1	17	SF	C 5.6	3	C		39		
LEAR	09	0200	0202	0209	S09	E52	4172	05	13.0	9	SF	C 5.6	3	C		21		
PALE	09	0227	0231	0236	S11	E52	4172	05	13.0	9	SF		3	C		43		
PALE	09	0227	0233	0240	S30	E50	4171	05	13.0	13	SF		3	C		40		F
LEAR	09	0233	0233	0243	N12	W64	4167	05	4.3	10	SF		3	C		27		
PALE	09	0302	0303	0320	S29	E50	4171	05	13.0	18	SN	C 2.0	3	C		61		F
LEAR	09	0407	0407	0410	S28	E50	4171	05	13.1	3	SF		3	C		25		
LEAR	09	0427	0431	0441	S10	E51	4172	05	13.0	14	SN	C 2.5	3	C		26		
LEAR	09	0531	0536	0549	S11	E52	4172	05	13.1	18	SN	C 4.8	3	C		69		F
PEKG	09	0535E	0536	0544	S10	E51		05	13.1	9D	SN	C 4.8		P	0536	76	1.2	E
LEAR	09	0623	0627	0644	S10	E51	4172	05	13.1	21	SN	C 2.3	3	C		80		F
PEKG	09	0626	0628	0635	S11	E49		05	13.0	9	SF	C 2.3		C	0628	63	1.0	E
KAND	09	0706	0708	0726	S10	E52		05	13.2	20	SB			C		42	.7	D
PEKG	09	0710	0714	0719	S11	E50		05	13.1	9	SN	C 9.6		P	0714	126	2.0	E
LEAR	09	0710	0715	0748	S11	E51	4172	05	13.1	38	SB	C 9.6	3	C		88		FE
MANI	09	0710	0710	0819	S09	E47		05	12.8	69	SB		1	V		95	1.4	
LEAR	09	0807	0812	0826	S10	E71		05	14.7	19	SF		3	C		39		F
RAMY	09	1200	1205	1229	S11	E46	4172	05	13.0	29	SB	C 3.7	3	C		57		
RAMY	09	1303	1304	1322	S11	E48	4172	05	13.2	19	SN	C 1.8	3	C		23		
HOLL	09	1407	1416	1529	S12	E46	4172	05	13.1	82	1N	M 1.0	3	C		203		FK
HOLL	09	1407	1454	1529	S12	E46	4172	05	13.1	82	SN		3	C		65		K
RAMY	09	1411	1413	1447	S11	E47	4172	05	13.1	36	SB	M 1.0	3	C		130		FE
HOLL	09	1511	1513	1519	S09	W63	4165	05	4.9	8	SF		3	C		51		F
GOES	09	1553	1556	1558						5		C 6.6						
HOLL	09	1620	1633	1724	S12	E44	4172	05	13.0	64	SN	C 2.9	3	C		75		FK
HOLL	09	1620	1646	1724	S12	E44	4172	05	13.0	64	SN		3	C		70		K
RAMY	09	1623	1628	1705	S11	E44	4172	05	13.0	42	SN		3	C		84		
HOLL	09	1654	1656	1706	S28	E42	4171	05	13.0	12	SN		3	C		90		F
HOLL	09	1730	1733	1807	S29	E41	4171	05	12.9	37	SN		3	C		73		FK
HOLL	09	1730	1755	1807	S29	E41	4171	05	12.9	37	SN		3	C		39		K
PALE	09	1732	1733	1810	S29	E42	4171	05	13.0	38	SN		3	C		60		FK
PALE	09	1732	1757	1810	S29	E42	4171	05	13.0	38	SF		3	C		35		K
RAMY	09	1733	1733	1803	S30	E44	4171	05	13.2	30	SN		3	C		56		K
RAMY	09	1733	1757	1803	S30	E44	4171	05	13.2	30	SF		3	C		30		K
HOLL	09	1811	1815	1828	S10	E44	4172	05	13.1	17	SF	C 1.8	3	C		56		F
PALE	09	1813	1814	1831	S10	E43	4172	05	13.0	18	SF		3	C		22		F
RAMY	09	1816E	1816	1840	S10	E42	4172	05	12.9	24D	SF		3	C		27		
HOLL	09	2021	2022	2026D	S12	E41	4172	05	12.9	5D	SB	C 1.2	3	C		72		
HOLL	09	2107	2112	2141D	S31	E39	4171	05	13.0	34D	SF	C 1.1	3	C		71		F

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement TIme (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	09	2109	2112	2140D	S10	E43	4172	05	13.1	31D	SF		3	C		29		K
HOLL	09	2109	2132	2140D	S10	E43	4172	05	13.1	31D	SN		3	C		43		K
HOLL	09	2200	2217	2253	S11	E41	4172	05	13.0	53	SF		3	C		42		
PALE	09	2214	2238	2242	S11	E41	4172	05	13.0	28	SF		3	C		63		
MANI	09	2302	2305	2350	S29	E39		05	13.0	48	2B		1	V		520	7.4	F
PALE	09	2302	2307U	2329D	S29	E39	4171	05	13.0	27D	2B	X 2.4	3	C		550		F
HOLL	09	2304	2311	2352	S30	E41	4171	05	13.2	48	2B	X 2.4	3	C		655		UE
LEAR	09	2331E	2331U	0007	S29	E42	4171	05	13.3	36D	1N		2	C		165		F
HOLL	10	0012	0012	0025	S09	W70	4165	05	4.8	13	SF		3	C		13		
LEAR	10	0015	0024	0038	S12	E40	4172	05	13.0	23	SN		3	C		45		
HOLL	10	0020	0023	0033	S11	E39	4172	05	13.0	13	SN		3	C		22		
LEAR	10	0027	0028	0035	S11	W12	4173	05	9.1	8	SF		3	C		24		
PALE	10	0255E	0258U	0350D	S10	E38	4172	05	13.0	55D	SN	C 3.3	3	C		63		F
PALE	10	0301	0308	0313	S12	W08	4173	05	9.5	12	SF		3	C		88		F
PALE	10	0308	0312	0317	S27	E37	4171	05	13.0	9	SF		3	C		23		
PALE	10	0323	0326	0339	S27	E38	4171	05	13.1	16	SF		3	C		25		F
MANI	10	0328E	0338	0525	S08	E38		05	13.0	117D	SN		1	V		85	1.1	F
PALE	10	0329	0336	0342	S12	W09	4173	05	9.5	13	SF		3	C		46		F
LEAR	10	0330	0343	0533	S08	E39	4172	05	13.1	123	SN		3	C		110		F
LEAR	10	0420E	0423	0500	N12	W90	4167	05	3.4	40D	SN		3	C				
LEAR	10	0503	0504	0509	N13	W74	4167	05	4.6	6	SF		3	C		14		
LEAR	10	0521	0522	0530	N13	W76	4167	05	4.5	9	SF		3	C				
LEAR	10	0527	0530	0534	S32	E34	4171	05	12.9	7	SF		3	C		19		
LEAR	10	0536	0537	0547	S09	E38	4172	05	13.1	11	SF		3	C		33		
YUNN	10	0651	0654	0704	S11	E15		05	11.4	13	SN			C		157	1.7	
YUNN	10	0711E	0711U	0739	S11	W15		05	9.2	28D	1N			P	0711	314	3.4	
KAND	10	0739	0741	0752U	S10	E35		05	13.0	13U	SF			C		29	.4	D
GOES	10	0745	0759	0802						17		C 1.1						
LEAR	10	0811	0811	0816	S30	E36	4171	05	13.2	5	SF		3	C		31		
YUNN	10	0924E	0924U	0929D	S11	W15		05	9.3	5D	1N			P	0924	314	3.4	
GOES	10	1008	1017	1029						21		C 2.3						
RAMY	10	1106	1211	1340	S13	W16	4173	05	9.3	154	1B	M 3.1	3	C		316		K
RAMY	10	1106	1302	1340	S13	W16	4173	05	9.3	154	1N		3	C		310		K
RAMY	10	1301	1308	1318	S12	E32	4172	05	13.0	17	SN		3	C		39		
HOLL	10	1350E	1352	1545D	S11	W18	4173	05	9.2	115D	SF		3	C		154		K
HOLL	10	1350E	1425	1545D	S11	W18	4173	05	9.2	115D	SN	C 1.8	3	C		95		FK
RAMY	10	1458	1511	1523	S15	W21	4173	05	9.0	25	SN		3	C		48		K
RAMY	10	1458	1516	1523	S15	W21	4173	05	9.0	25	SN		3	C		49		K
HOLL	10	1503	1507	1521	S18	W25	4169	05	8.7	18	SN		3	C		57		F
RAMY	10	1619	1622	1636	S14	W55	4168	05	6.5	17	SF		3	C		18		
RAMY	10	1627	1631	1657	S12	W19	4173	05	9.3	30	SN	C 3.9	3	C		50		
PALE	10	1644E	1650U	1715	S13	W20	4173	05	9.2	31D	SN	C 3.9	3	C		80		
RAMY	10	1646	1647	1659	S28	E28	4171	05	12.9	13	SF		3	C		33		
PALE	10	1722	1739	1747	S13	W20	4173	05	9.2	25	SF		3	C		94		
PALE	10	1800	1808	1952	S13	W21	4173	05	9.2	112	SN		3	C		60		K
PALE	10	1800	1844U	1952	S13	W21	4173	05	9.2	112	SN	C 5.7	3	C		114		FK
HOLL	10	1827E	1842	2056	S12	W22	4173	05	9.1	149D	SB	C 5.7	3	C		165		FE
HOLL	10	1921	1922	1928	S29	E28	4171	05	13.0	7	SN		3	C		24		
HOLL	10	2007	2012	2026	S12	E27	4172	05	12.9	19	SF		3	C		67		F
GOES	10	2212	2223	2228						16		C 1.4						
HOLL	10	2344	2346	2356	S11	W24	4173	05	9.2	12	SN	C 1.8	3	C		60		
GOES	11	0001	0008	0023						22		M 2.5						
YUNN	11	0043	0044	0045	S29	E27		05	13.1	2	SN			C		31	.4	
GOES	11	0244	0251	0258						14		C 2.2						
YUNN	11	0246E	0246U	0310	S12	W27		05	9.1	24D	SN			P	0246	157	1.8	F
LEAR	11	0354	0408	0445	S11	W24	4173	05	9.4	51	SB	M 3.1	3	C		99		F
MANI	11	0411E	0411U	0428	S10	W25		05	9.3	17D	SN		1	V		90	1.0	
LEAR	11	0450	0451	0459	S12	W27	4173	05	9.2	9	SF	C 4.4	3	C		24		
GOES	11	0549	0557	0605						16		C 7.7						
GOES	11	0653	0657	0701						8		C 3.3						
GOES	11	0733	0738	0745						12		C 1.9						
LEAR	11	0759	0800	0824	S10	E24	4172	05	13.1	25	SF	C 5.4	3	C		46		F
LEAR	11	0825	0826	0854	S11	W26	4173	05	9.4	29	SN		3	C		26		
GOES	11	1026	1102	1200						94		C 5.0						
HOLL	11	1322	1329	1332D	S12	W30	4173	05	9.3	10D	SB	M 1.3	3	C		75		
RAMY	11	1419	1423	1423D	S31	E22	4171	05	13.3	4D	1B	M 1.9	3	C		263		UF
HOLL	11	1420	1423	1426D	S31	E22	4171	05	13.3	6D	1B	M 1.9	3	C		414		FE
RAMY	11	1737	1745	1802	S10	E17	4172	05	13.0	25	SF		3	C		27		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
PALE	11	1907E	1919U	1928	S11	W36	4173	05	9.1	21D	SF		3	C		61		F
PALE	11	1935	1942	2031	S11	E16	4172	05	13.0	56	SN	C 6.3	3	C		190		F
PALE	11	2032	2032	2041	S12	W38	4173	05	9.0	9	SF		3	C		26		F
GOES	11	2156	2201	2204						8		C 4.2						
GOES	11	2207	2214	2228			4173			21		M 2.5						
HOLL	11	2257E	2312	2336	S10	W40	4173	05	8.9	39D	SN		3	C		79		
HOLL	11	2320	0012	0048	S28	E13	4171	05	13.0	88	SF		3	C		136		K
HOLL	11	2320	2338	0048	S28	E13	4171	05	13.0	88	1B	C 5.9	3	C		345		FEK
MANI	11	2327	2337	2348	S28	E13		05	13.0	21	1B		1	V		195	2.3	F
LEAR	11	2337E	2339U	2350	S28	E14	4171	05	13.1	13D	SB	C 5.9	3	C		158		F
HOLL	11	2337	0038	0106	S09	W39	4173	05	9.1	89	1B		3	C		380		FEK
HOLL	11	2337	2342	0106	S09	W39	4173	05	9.1	89	SF		3	C		37		K
LEAR	11	2353	0025	0057	S10	W38	4173	05	9.1	64	SB		3	C		98		FK
LEAR	11	2353	0038	0057	S10	W38	4173	05	9.1	64	1B		3	C		254		K
PEKG	12	0007	0014	0021	S09	W39		05	9.1	14	SN			C	0014	97	1.3	E
PEKG	12	0010	0014	0020	S27	E17		05	13.3	10	SF			C	0014	29	.4	D
PEKG	12	0010	0014	0022	N06	E80		05	18.0	12	SF			C	0014	17		E
LEAR	12	0011	0011	0025	S27	E17	4171	05	13.3	14	SF		3	C		27		
PEKG	12	0020	0030	0045D	S09	W39		05	9.1	25D	1N			C	0030	202	2.7	EKU
PEKG	12	0020	0038	0045D	S10	W39		05	9.1	25D	1N	M 1.0		C	0038	176	2.4	E
PEKG	12	0020	0022	0035	S08	W28		05	9.9	15	SF	C 5.5		C	0022	46	.5	E
HOLL	12	0020	0026	0045	S08	W28	4175	05	9.9	25	SN	C 5.5	3	C		76		F
LEAR	12	0021	0023	0045	S09	W27	4175	05	10.0	24	SB	C 5.5	3	C		89		F
LEAR	12	0028	0030	0036	S29	E10	4171	05	12.8	8	SF		3	C		27		
PEKG	12	0036	0040	0050	N08	E88		05	18.6	14	SB			C	0040	84		A
HOLL	12	0042	0042	0049	N07	E78	4174	05	17.9	7	SF		3	C		25		
PEKG	12	0148	0150	0210	S11	W38		05	9.2	22	SF	C 8.2		C	0150	59	.8	E
LEAR	12	0150	0157	0205	S12	W36	4173	05	9.4	15	SN	C 8.2	3	C		64		
LEAR	12	0151	0154	0156	N08	E70	4174	05	17.3	5	SF		3	C		11		
LEAR	12	0219	0225	0236	S30	E14	4171	05	13.2	17	SF		3	C		118		
LEAR	12	0223	0223	0229	S10	W41	4173	05	9.0	6	SF		3	C		25		
LEAR	12	0223	0246	0311	S11	E12	4172	05	13.0	48	SF		3	C		60		
MANI	12	0225	0227	0234D	S10	W40		05	9.1	9D	SF		1	V		30	.4	
LEAR	12	0237	0256	0346	S30	E15	4171	05	13.3	69	3B	M 5.6	3	C		1174		EH
MANI	12	0238	0251	0324	S30	E15		05	13.3	46	2B		1	V		810	9.8	
PEKG	12	0254F	0256	0319	S31	E15		05	13.3	25D	2B	M 5.6		C	0256	505	6.0	F
MANI	12	0240	0255	0327	S10	W39		05	9.2	47	1B		1	V		170	2.3	
LEAR	12	0241	0256	0328	S10	W39	4173	05	9.2	47	SB		3	C		154		F
PEKG	12	0250	0254	0322	S10	W40		05	9.1	32	SN			C	0254	126	1.7	E
LEAR	12	0346	0402	0415	N08	E75	4174	05	17.8	29	SF		3	C		23		
LEAR	12	0422	0433	0442	S11	W42	4173	05	9.0	20	SN	C 2.7	3	C		65		
PEKG	12	0432	0434	0437	S09	W42		05	9.0	5	SN			C	0434	67	.9	E
PEKG	12	0454	0456	0500	N07	E77		05	18.0	6	SF			C	0456	17		D
PEKG	12	0456E	0457	0504	S29	E10		05	13.0	8D	SN	C 6.4		C	0457	160	1.8	E
PEKG	12	0551	0554	0603	S09	W32		05	9.8	12	SF	C 3.5		C	0554	84	1.0	E
LEAR	12	0552E	0557	0558D	S09	W30	4175	05	10.0	6D	SB	C 3.5	3	C		84		
MANI	12	0559E	0559U	0621	S09	W29		05	10.1	22D	SN		1	V		65	.8	
GOES	12	0628	0634	0641						13		C 5.4						
BUCA	12	0630	0636	0655	S11	W42		05	9.1	25	SF			C	0636	107	1.5	E
LEAR	12	0712	0713	0725	S09	W31	4175	05	10.0	13	SN	C 2.6	3	C		47		
PEKG	12	0723	0724	0729	S10	W44		05	9.0	6	SF			C	0724	50	.7	E
GOES	12	0825	0828	0830						5		C 1.3						
PEKG	12	0833	0836	0846	S09	W43		05	9.1	13	SF	C 2.9		P	0836	42	.6	D
LEAR	12	0834E	0838	0902D	S10	W42	4173	05	9.2	28D	1N	C 2.9	3	C		245		
WEND	12	0834	0838	0842	S10	W44		05	15.7	8	SF			C	0838	38	.5	
MANI	12	0836	0838	0915	S10	W43		05	9.1	39	1N		1	V		230	3.2	
YUNN	12	0856	0859	0905	S08	W33		05	9.9	9	SF			P		31	.4	
WEND	12	0856	0858	0904	S10	W34		05	9.8	8	SF			C	0858	25	.3	
LEAR	12	0857	0859	0902D	S08	W32	4175	05	10.0	5D	SN	C 2.6	3	C		83		
WEND	12	1049	1114	1143	S11	E09		05	13.1	54	SF			C	1114	81	.9	
GOES	12	1108	1112	1117						9		C 2.5						
GOES	12	1150	1205	1230						40		C 3.3						
WEND	12	1156	1203	1212D	S11	E09		05	13.2	16D	SF			C	1203	63	.7	
RAMY	12	1234	1238	1249	S10	W32	4175	05	10.1	15	SN	C 7.3	3	C		43		
RAMY	12	1235	1247	1258	N08	E69	4174	05	17.7	23	SF		3	C		72		
HOLL	12	1238E	1238U	1250D	N09	E67	4174	05	17.6	12D	SN		3	C		50		
RAMY	12	1325	1331	1334	S34	E05	4171	05	13.0	9	SF		3	C		22		
RAMY	12	1333	1337	1411	S12	W44	4173	05	9.2	38	SB	M 2.2	3	C		93		
HOLL	12	1334E	1340	1515	S12	W44	4173	05	9.2	101D	1B	M 2.2	3	C		195		FEK
HOLL	12	1334E	1500	1515	S12	W44	4173	05	9.2	101D	SN		3	C		29		K

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
RAMY	12	1416	1419	1436	S11	W44	4173	05	9.3	20	SN		3	C		74		
RAMY	12	1528	1531	1534	S08	W42	4173	05	9.5	6	SN	C 2.5	3	C		59		
HOLL	12	1529	1532	1535	S06	W42	4173	05	9.5	6	SB	C 2.5	3	C		61		
HOLL	12	1611	1612	1628	S08	E05	4172	05	13.0	17	SF		3	C		38		F
HOLL	12	1619	1621	1634	S08	W44	4173	05	9.4	15	SN	C 3.4	3	C		70		F
RAMY	12	1620	1622	1628	S09	W45	4173	05	9.3	8	SN	C 3.4	3	C		70		
HOLL	12	1633	1640	1704	N09	E75	4174	05	18.3	31	SB		3	C		60		
RAMY	12	1639	1640	1704	N09	E72	4174	05	18.1	25	SB		3	C		37		
HOLL	12	1639	1641	1656	S10	E06	4172	05	13.1	17	SF		3	C		32		
HOLL	12	1653	1654	1657	S09	W40	4173	05	9.7	4	SN		3	C		26		
HOLL	12	1654	1654	1704	S08	W38	4175	05	9.9	10	SN		3	C		23		
HOLL	12	1712	1717	1721	N07	E70	4174	05	18.0	9	SF		3	C		21		
PALE	12	1720	1722	1742	S09	W48	4173	05	9.1	22	SN		3	C		25		F
RAMY	12	1721	1721	1724	S10	W46	4173	05	9.3	3	SN	C 2.4	3	C		18		
HOLL	12	1721	1721	1732	S09	W48	4173	05	9.1	11	SB	C 2.4	3	C		29		H
HOLL	12	1736	1737	1743	S11	W46	4173	05	9.3	7	SN		3	C		29		H
HOLL	12	1747	1747	1752D	S07	W38	4175	05	9.9	5D	SB		3	C		47		
RAMY	12	1748	1748	1752	S09	W39	4173	05	9.8	4	SN		3	C		20		
GOES	12	1846	1849	1851						5		C 1.3						
HOLL	12	1938	1938	1954	S11	E06	4172	05	13.3	16	SF	C 1.8	3	C		29		
HOLL	12	2028	2036	2117	S10	E03	4172	05	13.1	49	SN		3	C		134		F
HOLL	12	2040	2045	2102	S07	W40	4175	05	9.9	22	SN		3	C		50		
HOLL	12	2040	2045	2125	S07	W45	4173	05	9.5	45	1N	C 3.5	3	C		301		FH
HOLL	12	2100	2100	2105	S31	E03	4171	05	13.1	5	SF		3	C		26		
HOLL	12	2105	2110	2115	S31	E05	4171	05	13.3	10	SF		3	C		70		F
HOLL	12	2141	2142	2146	S31	E02	4171	05	13.1	5	SN	C 1.2	3	C		23		
HOLL	12	2221	2222	2317	S29	E03	4171	05	13.2	56	SN	C 1.7	3	C		46		F
HOLL	12	2226	2228	2240	S10	E02	4172	05	13.1	14	SF		3	C		37		F
HOLL	13	0009	0026	0032	S09	W51	4173	05	9.2	23	SN		3	C		57		F
PEKG	13	0027	0032	0037	S09	W53		05	9.0	10	SF			C	0032	25	.4	D
LEAR	13	0028E	0029	0040D	S10	W51	4173	05	9.2	12D	SF		2	C		106		
PEKG	13	0010	0015	0021	S11	E00		05	13.0	11	SF			C	0015	46	.5	E
LEAR	13	0014	0015	0034	S10	W00	4172	05	13.0	20	SF		3	C		91		
PALE	13	0014	0015	0023	S11	W01	4172	05	12.9	9	SF		3	C		31		
HOLL	13	0014	0015	0025	S10	E01	4172	05	13.1	11	SF		3	C		52		F
YUNN	13	0057	0100	0116	S29	E03		05	13.3	19	SN			C		47	.5	
HOLL	13	0057	0100	0109	S29	E01	4171	05	13.1	12	SF		3	C		26		F
PALE	13	0138E	0141U	0145	S11	W43	4175	05	9.8	7D	SF		3	C		20		
PEKG	13	0141	0143	0145	S09	W43		05	9.8	4	SF			C	0143	42	.6	E
LEAR	13	0246	0250	0306	S09	E20	4176	05	14.6	20	SF	C 1.2	3	C		63		
LEAR	13	0338	0340	0349	S08	E19	4176	05	14.6	11	SF		3	C		23		
GOES	13	0450	0507	0530						40		C 1.4						
GOES	13	0541	0544	0546						5		C 2.1						
GOES	13	0613	0617	0621						8		C 1.8						
LEAR	13	0629E	0630	0700	S11	W03	4172	05	13.0	31D	SF		3	C		98		F
BUCA	13	0630	0637	0705	S08	W02		05	13.1	35	1F			C	0637	322	3.3	
PEKG	13	0636E	0636	0646	S10	W03		05	13.0	10D	SF			P	0636	92	.9	F
BUCA	13	0630	0636	0655	S08	W52		05	9.4	25	1N			C	0636	215	3.6	
LEAR	13	0631	0637	0647	S08	W53	4173	05	9.3	16	SB	C 6.2	3	C		128		
PEKG	13	0636E	0636	0646D	S08	W53		05	9.3	10D	SB	C 6.2		P	0636	118	2.0	E
LEAR	13	0716	0720	0723	S11	W56	4173	05	9.1	7	SF	C 1.9	3	C		21		
LEAR	13	0744	0747	0800D	S08	E17	4176	05	14.6	16D	SN	C 2.2	3	C		93		
BUCA	13	0745	0750U	0800	S07	E18		05	14.7	15	SN			C	0750	107	1.2	E
PEKG	13	0746E	0746	0756	S08	E17		05	14.6	10D	SF	C 2.2		P	0746	25	.3	E
CATA	13	0750E	0750	0755D	S09	E18		05	14.7	5D	S			P	0750	84	1.0	
LEAR	13	0847	0850	0901	S30	W02	4171	05	13.2	14	SF		3	C		29		
PEKG	13	0918E	0918	0920	S13	W52		05	9.5	2D	SN			P	0918	17	.3	D
WEND	13	1018	1024	1030	S08	W54		05	9.4	12	1N	C 3.4		C	1024	131	2.3	
CATA	13	1020	1025	1025D	S08	W55		05	9.3	5D	1			P	1025	281	5.0	
GOES	13	1057	1100	1102						5		C 2.1						
WEND	13	1108	1110	1122D	S07	W52		05	9.6	14D	SN			C	1110	106	1.8	
GOES	13	1109	1113	1116			4173			7		C 2.8						
CATA	13	1115E	1120	1140	S08	W50		05	9.7	25D	S			P	1120	112	1.8	
GOES	13	1243	1246	1248			4171			5		C 2.0						
KAND	13	1246	1252	1304	S29	W03		05	13.3	18	SF			C		27	.3	D
HOLL	13	1246E	1254	1310	S61	W03	4171	05	13.3	24D	SN		3	C		30		
RAMY	13	1420	1421	1627D	S10	W59	4173	05	9.2	127D	SB	C 4.8	3	C		56		
HOLL	13	1420	1425	1502	S09	W55	4173	05	9.5	42	SN	C 4.8	3	C		58		F
HOLL	13	1448	1453	1459	N07	E57	4174	05	17.9	11	SF		3	C		19		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	13	1724	1725	1742	S08	W51	4175	05	9.9	18	SF		3	C		30		
HOLL	13	1810	1811	1816	S07	W58	4173	05	9.4	6	SF		3	C		27		F
HOLL	13	1840	1841	1852	S07	W53	4175	05	9.8	12	SF	C 1.3	3	C		26		F
HOLL	13	1840	1844	1933	S10	W60	4173	05	9.3	53	SN		3	C		32		K
HOLL	13	1840	1905	1933	S10	W60	4173	05	9.3	53	SN	C 2.1	3	C		64		FK
HOLL	13	1941	1947	2005	S06	W54	4175	05	9.8	24	SF		3	C		34		
HOLL	13	2040	2040	2057	N07	E52	4174	05	17.8	17	SF		3	C		29		
HOLL	13	2139	2140	2147	S10	W11	4172	05	13.1	8	SF		3	C		23		
HOLL	13	2224	2226	2234D	S09	W62	4173	05	9.3	10D	SF		3	C		33		
HOLL	13	2333	2340	0007	S06	W56	4175	05	9.8	34	SN		3	C		31		
HOLL	13	2339	2340		S08	W58	4173	05	9.6		SN	C 1.1	3	C		26		
HOLL	14	0015	0030	0038	S11	W63	4173	05	9.3	23	SF		3	C		23		F
GOES	14	0148	0203	0209						21		C 1.4						
LEAR	14	0236	0251	0301	S08	W59	4173	05	9.7	25	SF		3	C		67		F
LEAR	14	0307	0309	0318	S12	W63	4173	05	9.4	11	SN		3	C		36		
LEAR	14	0347	0417	0519	S11	W67	4173	05	9.1	92	1N	C 4.7	3	C		176		F
MANI	14	0347	0408	0519	S11	W70		05	8.9	92	1N		1	V		158	3.5	F
YUNN	14	0410E	0415	0430	S10	W66		05	9.2	20D	1N			P		94		
LEAR	14	0628	0629	0641	S10	W71	4173	05	8.9	13	SF	C 2.0	3	C		15		
LEAR	14	0633	0634	0640	S13	W75	4173	05	8.6	7	SF		3	C				
LEAR	14	0633	0703	0911	S24	W22	4171	05	12.6	158	1N		3	C		260		F
MANI	14	0633	0704	0743	S24	W22		05	12.6	70	1N		1	V		260	3.1	F
MANI	14	0634	0634	0641	S13	W75		05	8.6	7	SF		1	V				
BUCA	14	0640	0725U	0800	S29	W22		05	12.6	80	1N			C	0725	322	3.9	E
CATA	14	0645	0725	0810D	S25	W23		05	12.5	85D	1			P	0725	337	4.1	
CATA	14	0645	0725	0810D	S31	W19		05	12.8	85D	1			P	0725	225	2.8	
YUNN	14	0653	0720	0813	S26	W21		05	12.7	80	2B			P		550	6.6	FW
MANI	14	0653	0707	0745	S27	W20		05	12.7	52	1N		1	V		220	2.7	
LEAR	14	0725	0735	0752	S11	W70	4173	05	9.0	27	SB	M 1.8	3	C		107		F
MANI	14	0725	0733	0751	S11	W70		05	9.0	26	1B		1	V		142	3.1	
YUNN	14	0730	0734	0743	S12	W73		05	8.8	13	1B			P		79		
BUCA	14	0733	0734	0746	S12	W70		05	9.0	13	SN			C	0734	86		E
LEAR	14	0835	0837	0907	S10	W71	4173	05	9.0	32	SN	C 5.0	3	C		27		
CATA	14	0945E	0950	1010	S10	W64		05	9.6	25D	S			P	0950	84	2.0	
GOES	14	0954	0957	0959						5		C 6.1						
WEND	14	0956	0958	1006	S11	W64		05	9.6	10	SN			C	0958	38	.9	
YUNN	14	1001E	1001U	1005D	S11	W65		05	9.5	4D	SN			P	1001	46	1.1	D
WEND	14	1044	1046	1048	S11	W70		05	9.2	4	SF			C	1046	31		
HOLL	14	1413	1414	1420	S10	W70	4173	05	9.3	7	SN	C 3.2	3	C		38		
HOLL	14	1439	1440	1511	S10	W21	4172	05	13.0	32	SF		3	C		38		F
HOLL	14	1515	1532	1535	S10	W72	4173	05	9.2	20	SF		3	C		19		F
HOLL	14	1535	1620	1655	S11	W68	4173	05	9.5	80	SN	C 5.1	3	C		78		F
HOLL	14	1606	1607	1609	S11	W24	4172	05	12.9	3	SF		3	C		27		
HOLL	14	1613	1615	1644	S30	W18	4171	05	13.3	31	SF		3	C		122		F
HOLL	14	1615	1617	1627	N08	E45	4174	05	18.1	12	SF		3	C		25		
HOLL	14	1620	1620	1630	S10	W24	4172	05	12.9	10	SN		3	C		39		F
HOLL	14	1635	1635	1659	S11	W25	4172	05	12.8	24	SF		3	C		33		K
HOLL	14	1635	1648	1659	S11	W25	4172	05	12.8	24	SF		3	C		56		SK
PALE	14	1707	1708	1718	S08	W66	4173	05	9.8	11	SF		3	C		20		
PALE	14	1806	1808	1816	S14	W72	4173	05	9.3	10	SB		3	C		53		
HOLL	14	1806	1807	1818	S11	W72	4173	05	9.3	12	SB	C 2.2	3	C		63		
PALE	14	1917	1923	1944	S12	W25	4172	05	12.9	27	SN	C 2.4	3	C		98		F
HOLL	14	1921	1923	1957	S11	W25	4172	05	12.9	36	SN	C 2.4	3	C		106		FK
HOLL	14	1921	1944	1957	S11	W25	4172	05	12.9	36	SN		3	C		70		K
GOES	14	2151	2154	2156						5		C 2.2						
GOES	14	2308	2311	2330						22		C 1.8						
MANI	15	0018	0018	0030	S26	E78		05	21.1	12	SF		1	V				F
LEAR	15	0019E	0019U	0029	S26	E78	4179	05	21.1	10D	SF	C 1.5	3	C				F
PEKG	15	0020E	0024	0040	S26	E84		05	21.5	20D	SN	C 1.5		P	0024	134		EY
YUNN	15	0030E	0030U	0045	S24	E89		05	21.9	15D				P	0033			A
GOES	15	0032	0035	0038						6		C 2.2						
GOES	15	0110	0115	0120						10		C 1.5						
LEAR	15	0212	0212	0226	N10	E38	4174	05	17.9	14	SF		3	C		37		
YUNN	15	0217	0221	0237	S10	W31		05	12.8	20	1N			C		308	3.7	
LEAR	15	0220	0220	0231	S10	W30	4172	05	12.8	11	SF		3	C		33		
YUNN	15	0237	0240	0254	N08	E41		05	18.2	17	SN			C		31	.4	D
GOES	15	0242	0246	0251						9		C 1.4						
YUNN	15	0325	0335	0343	S08	W30		05	12.9	18	1N			C		308	3.7	E
LEAR	15	0329	0336	0351	S11	W30	4172	05	12.9	22	SN	C 2.1	3	C		73		F

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PEKG	15	0333	0336	0343	S10	W31		05	12.8	10	SN	C 2.1		C	0336	101	1.2	E
GOES	15	0513	0520	0524						11		C 1.7						
GOES	15	0535	0549	0552						17		C 2.7						
LEAR	15	0615	0641	0716	S12	W81	4173	05	9.2	61	SN	M 2.0	3	C				F
MANI	15	0642	0642	0703	S10	W79		05	9.3	21	1B		1	V				
CATA	15	0645	0645	0720	S11	W78		05	9.4	35	1			C	0645	84		
PEKG	15	0647	0652	0659	S11	W82		05	9.1	12	SF			C	0652	42		E
MANI	15	0649	0654	0708	S11	W29		05	13.1	19	SN		1	V		45	.5	F
LEAR	15	0651	0652	0707	S11	W33	4172	05	12.8	16	SF		3	C		40		
LEAR	15	0748	0749	0809	S10	W33	4172	05	12.8	21	SF		3	C		45		F
LEAR	15	0839	0845	0909D	S11	W81	4173	05	9.3	30D	2B	X 2.3	2	C				F
PEKG	15	0845E	0850	0856	S10	W80		05	9.3	11D	SB	X 2.3		P	0850	126		E
CATA	15	0845	0900	0945	S12	W80		05	9.3	60	2			C	0900	281		
LEAR	15	0852	0900	0902	S16	W91	4169	05	8.5	10	SF		3	C				
HOLL	15	1553	1557	1604	S11	W81	4173	05	9.6	11	SN	C 1.8	3	C		48		F
HOLL	15	1608	1612	1622	S12	W80	4173	05	9.6	14	1N	C 3.3	3	C		108		F
HOLL	15	1743	1753	1805	S12	W80	4173	05	9.7	22	SF	C 2.0	3	C		19		
PALE	15	1933	1933	1947	S11	W40	4172	05	12.8	14	SF		3	C		26		
HOLL	15	2224	2225	2242	S10	W82	4173	05	9.8	18	SF	C 2.0	3	C		30		
HOLL	15	2254	2256	2304	S09	W17	4176	05	14.7	10	SN	C 1.9	3	C		48		F
PEKG	15	2350	2355	2401	S09	W17		05	14.7	11	SF			P	2355	34	.4	E
GOES	15	2359	0011	0015						16		C 2.7						
PEKG	16	0020	0110	0130	S06	W90		05	9.3	70	SN			C	0110	84		A
GOES	16	0040	0045	0049						9		C 2.3						
LEAR	16	0111	0122	0132	S12	W90	4173	05	9.3	21	SF		3	C				
GOES	16	0206	0209	0211						5		C 2.0						
GOES	16	0420	0425	0430						10		C 3.4						
GOES	16	0519	0525	0529						10		C 2.1						
GOES	16	0601	0610	0618						17		C 6.2						
WEND	16	0802	0805	0811	S30	W40		05	13.2	9	SF			C	0805	38	.6	
LEAR	16	0803	0803	0812	S30	W39	4171	05	13.3	9	SF		3	C		33		
CATA	16	0805	0805	0810	S31	W40		05	13.2	5	S			C	0805	56	.8	
GOES	16	0813	0818	0821						8		C 2.0						
LEAR	16	0822	0823	0842	S10	W48	4172	05	12.7	20	SF		3	C		29		
GOES	16	0943	0949	0959						16		C 1.1						
GOES	16	1037	1044	1053						16		C 1.3						
GOES	16	1125	1140	1147						22		C 4.3						
GOES	16	1340	1344	1350						10		C 2.2						
HOLL	16	1405E	1405U	1421	S09	W90	4173	05	9.8	16D	SB	M 1.3	3	C				
HOLL	16	1536	1539	1617	S32	W53	4171	05	12.5	41	SN	C 2.1	3	C		69		
HOLL	16	1629	1633	1833	S29	W54	4171	05	12.5	124	SN	C 5.7	3	C		123		UFK
HOLL	16	1629	1719	1833	S29	W54	4171	05	12.5	124	SF		3	C		92		K
HOLL	16	1708	1710	1717	S10	W27	4176	05	14.7	9	SF		3	C		37		
HOLL	16	2154	2156	2215	S07	W31	4176	05	14.6	21	SF		3	C		36		F
HOLL	16	2156	2158	2214	S28	W48	4171	05	13.2	18	SF	B 9.9	3	C		44		
HOLL	16	2246	2251	2304	S27	E50	4179	05	20.8	18	1B	C 1.3	3	C		228		E
LEAR	17	0520	0523	0545	S09	W35	4176	05	14.6	25	SF	C 1.0	3	C		33		
LEAR	17	0536	0547	0549	S10	W57	4172	05	12.9	13	SF		3	C		42		
GOES	17	1026	1030	1033						7		B 9.3						
RAMY	17	1214	1235	1245	S12	W61	4172	05	12.9	31	SF		3	C		38		
RAMY	17	1623	1627	1633	N18	E77		05	23.6	10	SF		3	C		26		
HOLL	17	1623	1627	1632	N15	E86		05	24.2	9	SF		3	C		13		
RAMY	17	1636	1638	1644	S23	E43	4179	05	21.0	8	SN		3	C		92		
HOLL	17	1636	1637	1644	S25	E44	4179	05	21.1	8	SN		3	C		76		
RAMY	17	1729	1732	1740	N16	E79		05	23.7	11	SN		3	C		45		
HOLL	17	1729	1731	1742	N15	E85		05	24.2	13	SN		3	C		40		
PALE	17	1817	1820	1822	S13	W65	4172	05	12.9	5	SF		3	C		19		
HOLL	17	1903	1907	1915	N16	E82	4183	05	24.0	12	SF		3	C		20		F
HOLL	17	2115	2124	2128	N15	E76	4183	05	23.6	13	SF		3	C		36		F
GOES	17	2131	2134	2141						10		C 1.8						
LEAR	18	0208	0211	0217	S28	W62	4171	05	13.2	9	SF		3	C		28		F
YUNN	18	0211E	0211U	0220	S26	W62		05	13.3	9D	SN			P	0211	31	.7	
PEKG	18	0300	0307	0320D	N16	E78		05	24.0	20D	SN			C	0307	147		AF
PEKG	18	0405	0420	0525	N16	E76		05	23.9	80	SN			C	0420	84		EK
PEKG	18	0405	0459	0525	N16	E76		05	23.9	80	SN			C	0459	84		E
PEKG	18	0453	0459	0507	S11	W48		05	14.6	14	SF			C	0459	63	1.0	E
PEKG	18	0537	0544	0550	N15	E72		05	23.7	13	SN	C 2.2		C	0544	84		E
GOES	18	0550	0605	0615						25		C 1.9						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	18	0732	0732	0738	N17	E70	4183	05	23.6	6	SF		3	C		44		
CATA	18	0745	0750	0800	N17	E73		05	23.9	15	S			C	0750	56		
PEKG	18	0753	0758	0810	N17	E72		05	23.8	17	SN			C	0758	67		E
LEAR	18	0754	0756	0806	N18	E70	4183	05	23.7	12	SF		3	C		30		
PEKG	18	0805	0822	0850	N17	E74		05	24.0	45	SF			C	0822	55		E
GOES	18	1043	1050	1052			4183			9		C 3.1						
RAMY	18	1059	1126	1127D	N15	E63		05	23.2	28D	1N		3	C		160		
GOES	18	1234	1238	1241						7		C 1.4						
HOLL	18	1304	1321	1422	N17	E68	4183	05	23.7	78	1N		3	C		223		K
HOLL	18	1304	1355	1422	N17	E68	4183	05	23.7	78	1B	C 1.4	3	C		151		K
HOLL	18	1311	1316	1333	S27	E47	4181	05	22.2	22	SF		3	C		27		
RAMY	18	1312	1321	1333	N19	E69	4183	05	23.8	21	SN	C 5.5	3	C		120		F
GOES	18	1317	1324	1326			4183			9		C 5.5						
RAMY	18	1353	1355	1418	N19	E66	4183	05	23.6	25	SN	C 2.8	3	C		77		
HOLL	18	1427	1428	1435	N17	E70	4183	05	23.9	8	SF		3	C		33		
HOLL	18	1437	1448	1457	N17	E69	4183	05	23.9	20	SB	C 2.6	3	C		86		
RAMY	18	1441	1448	1536	N18	E66	4183	05	23.6	55	SB	C 2.6	3	C		119		K
RAMY	18	1441	1532	1536	N18	E66	4183	05	23.6	55	SN	C 2.3	3	C		47		K
HOLL	18	1524	1533	1550	N16	E69	4183	05	23.9	26	SF	C 2.3	3	C		108		
RAMY	18	1618	1622	1659	N17	E64	4183	05	23.5	41	SF		3	C		44		K
RAMY	18	1618	1652	1659	N17	E64	4183	05	23.5	41	SN	C 1.7	3	C		100		K
HOLL	18	1621	1653	1659	N17	E69	4183	05	23.9	38	SN	C 1.7	3	C		88		
PALE	18	1700	1719	1730D	N19	E66	4183	05	23.7	30D	SB	C 2.9	3	C		88		
RAMY	18	1707	1718	1736	N16	E65	4183	05	23.6	29	SN	C 2.9	3	C		84		F
HOLL	18	1710	1719	1743	N14	E67	4183	05	23.8	33	SB	C 2.9	3	C		76		E
RAMY	18	1738	1739	1753	N13	E59	4183	05	23.2	15	SF		3	C		23		
RAMY	18	1801	1804	1816	N17	E65	4183	05	23.7	15	SF		3	C		26		
RAMY	18	1809	1810	1828	S24	E44	4181	05	22.2	19	SN		3	C		51		F
HOLL	18	1809	1810	1820	S26	E45	4181	05	22.3	11	SN		3	C		43		
RAMY	18	1826	1829	1935D	N16	E65	4183	05	23.7	69D	SN		3	C		72		K
RAMY	18	1826	1851	1935D	N16	E65	4183	05	23.7	69D	SN	C 3.0	3	C		124		K
HOLL	18	1827	1829	1836	N14	E65	4183	05	23.7	9	SN		3	C		38		
HOLL	18	1845	1854	1859	N17	E66	4183	05	23.8	14	SN	C 3.0	3	C		49		F
HOLL	18	1942	1945	1951	N16	E67	4183	05	23.9	9	SN		3	C		33		F
HOLL	18	2248	2248	2258	S25	E25	4179	05	20.9	10	SN		3	C		26		
LEAR	19	0029	0116	0140	N17	E64	4183	05	23.9	71	SF		3	C		54		
LEAR	19	0153	0155	0249	N15	E55	4183	05	23.2	56	SF		3	C		81		F
YUNN	19	0251E	0251U	0251D	S09	W59		05	14.7	56D	SN			P	0251	31	.6	
LEAR	19	0545	0548	0553	S25	E21	4179	05	20.9	8	SF		3	C		25		H
LEAR	19	0754	0759	0811	S07	W64	4176	05	14.5	17	SF	C 1.3	3	C		24		
CATA	19	0755	0755	0810	S09	W64		05	14.5	15	1			C	0755	169	4.0	
GOES	19	0929	0934	0939						10		C 1.9						
GOES	19	1012	1015	1019						7		C 1.9						
RAMY	19	1055	1109	1136	N17	E57	4183	05	23.8	41	1N	C 1.8	3	C		150		K
RAMY	19	1055	1112	1136	N17	E57	4183	05	23.8	41	SN	C 1.8	3	C		133		K
RAMY	19	1144	1147	1241	N17	E57	4183	05	23.8	57	SN		3	C		79		
RAMY	19	1247	1259	1302	N16	E53	4183	05	23.6	15	SF		3	C		85		
RAMY	19	1307	1318	1337	N16	E59	4183	05	24.0	30	SN		3	C		95		
HOLL	19	1559	1600	1607	S26	E32	4181	05	22.2	8	SN		3	C		45		
GOES	19	1613	1614	1628						15		C 1.7						
HOLL	19	1633	1635	1639	N17	E56	4183	05	23.9	6	SN		3	C		61		
GOES	19	1749	1753	1756						7		C 1.4						
RAMY	19	1849	1905	1926D	N15	E56	4183	05	24.0	37D	SN	C 1.3	3	C		28		F
GOES	19	1945	1946	1951						6		C 2.1						
HOLL	19	2054	2101	2107	N17	E55	4183	05	24.1	13	SF		3	C		38		
HOLL	19	2110	2110U	2135	N17	E54	4183	05	24.0	25	SF	C 2.2	2	C		18		
HOLL	19	2139	2141	2153	N17	E52	4183	05	23.9	14	SN	C 2.4	2	C		134		F
GOES	19	2258	2301	2304						6		C 3.7						
HOLL	19	2317	2323		N15	E54	4183	05	24.1		SF		3	C		29		K
HOLL	19	2317	2341		N15	E54	4183	05	24.1		SN		3	C		29		FK
YUNN	20	0024	0037	0044	N18	E50		05	23.8	20	SN			C		38	.7	D
MANI	20	0024	0041	0051D	N17	E51		05	23.9	27D	SB		1	V		47	.8	
HOLL	20	0024	0047	0119	N17	E51	4183	05	23.9	55	SB	C 4.5	2	C		146		F
LEAR	20	0029	0047	0118	N19	E51	4183	05	23.9	49	SB	C 4.5	3	C		124		FE
MANI	20	0029	0043	0051D	N18	E49		05	23.8	22D	SB		1	V		85	1.4	
YUNN	20	0035	0047	0108	N18	E52		05	24.0	33	1N			C		185	3.3	
GOES	20	0043	0047	0053			4183			10		C 7.6						
YUNN	20	0110	0114	0124	S20	W65		05	15.1	14	1N			P		123		
LEAR	20	0140	0140	0155	N19	E54	4183	05	24.2	15	SN		3	C		23		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	20	0432	0437	0447	N17	E46	4183	05	23.7	15	SF		3	C		39		
LEAR	20	0522	0527	0544	S20	E78		05	26.2	22	SN	C 4.7	3	C				
LEAR	20	0525	0525	0530	N18	E48	4183	05	23.9	5	SN		3	C		28		F
GOES	20	0536	0539	0548						12		C 5.2						
GOES	20	0750	0805	0815						25		C 5.8						
CATA	20	0800	0810	0825	N17	E45		05	23.8	25	1			C	0810	169	2.6	
GOES	20	0836	0839	0842						6		C 3.1						
GOES	20	1115	1120	1122						7		C 2.2						
GOES	20	1255	1258	1300						5		C 1.8						
GOES	20	1302	1305	1307						5		C 1.8						
GOES	20	1351	1355	1358						7		C 2.5						
HOLL	20	1412	1412	1422	N10	W34	4174	05	18.0	10	SF		3	C		18		
HOLL	20	1437	1444	1505	N16	E46	4183	05	24.1	28	SF	C 1.5	3	C		50		
HOLL	20	1504	1509	1528	S22	E79		05	26.7	24	1F	C 4.1	3	C		143		F
GOES	20	1607	1610	1612						5		C 2.1						
HOLL	20	1704E	1704U	1740	N14	E48	4183	05	24.3	36D	SB	C 3.7	3	C		100		E
GOES	20	1800	1813	1824						24		C 2.4						
LEAR	21	0117	0119	0123	N18	E38	4183	05	23.9	6	SF		3	C		23		F
LEAR	21	0140	0143	0159	N17	E39	4183	05	24.0	19	SF		3	C		18		
LEAR	21	0335	0340	0351	N16	E40	4183	05	24.2	16	SF		3	C		39		
GOES	21	0448	0515	0520						32		C 3.7						
YUNN	21	0745	0750	0805	N18	E33		05	23.8	20	SN			C		46	.6	E
YUNN	21	0753	0754	0801	S19	E63		05	26.1	8	SN			C		23	.5	
GOES	21	0755	0818	0823						28		C 2.6						
RAMY	21	1110	1113	1136	N19	E32	4183	05	23.9	26	SN	C 1.9	3	C		77		
RAMY	21	1340	1340	1401	N19	E31	4183	05	23.9	21	SN	C 2.2	3	C		43		F
HOLL	21	1341	1345	1412	N17	E33	4183	05	24.1	31	SN	C 2.2	3	C		50		F
HOLL	21	1659	1714	1731	S19	E71	4185	05	27.1	32	SF		3	C		23		F
HOLL	21	1727	1729	1743	N18	E23	4183	05	23.5	16	SN	C 1.1	3	C		42		F
GOES	21	1831	1833	1837						6		C 1.0						
HOLL	21	1947	1947	2002	N15	E31	4183	05	24.2	15	SF	C 1.2	3	C		47		F
HOLL	21	1957	1958	2007	N11	W52	4174	05	17.9	10	SF	C 1.3	3	C		85		F
HOLL	21	2032	2035	2051	S18	E56	4185	05	26.1	19	SN	C 1.1	3	C		96		
HOLL	21	2128	2129	2139	N19	E25	4183	05	23.8	11	SN	C 1.7	3	C		99		F
HOLL	21	2144	2153	2206	N14	E22	4183	05	23.6	22	SF		3	C		41		F
GOES	22	0150	0156	0202						12		C 1.1						
LEAR	22	0336E	0340	0416	N16	E24	4183	05	24.0	40D	SN	C 3.7	2	C		160		F
PALE	22	0336E	0338	0411D	N15	E25	4183	05	24.0	35D	SN	C 3.7	3	C		162		FE
YUNN	22	0337E	0337U	0352	N15	E26		05	24.1	15D	1B			P	0337	231	2.8	F
YUNN	22	0517	0519	0535	N15	E16		05	23.4	18	SN			C		15	.2	D
YUNN	22	0603	0606	0622	S20	E63		05	27.1	19	SN			C		46	1.1	
GOES	22	0832	0835	0837						5		C 2.1						
GOES	22	0911	0915	0920						9		C 5.0						
GOES	22	1005	1012	1022						17		C 5.9						
HOLL	22	1219E	1221U	1254	N16	E22	4183	05	24.2	35D	SB	C 3.6	2	C		89		F
RAMY	22	1220	1224	1250	N16	E22	4183	05	24.2	30	SB	C 3.6	3	C		155		
HOLL	22	1356	1356	1410	N19	E17	4183	05	23.9	14	SN		3	C		43		F
RAMY	22	1437	1444	1540	S19	E50	4185	05	26.4	63	SF		3	C		25		
RAMY	22	1452	1502	1520	N17	E14	4183	05	23.7	28	SF	C 2.2	3	C		61		
HOLL	22	1453	1534	1621	N16	E19	4183	05	24.1	88	SF		3	C		45		K
HOLL	22	1453	1544	1621	N16	E19	4183	05	24.1	88	SF		3	C		58		FK
HOLL	22	1508	1509	1519	S29	W18	4179	05	21.2	11	SF		3	C		20		
RAMY	22	1542	1545	1556	N16	E17	4183	05	23.9	14	SF		3	C		27		
HOLL	22	1610	1622	1629	S19	E57		05	27.0	19	SN		3	C		26		F
HOLL	22	1709	1711	1718	S20	E56		05	27.0	9	SN		3	C		16		
HOLL	22	1732	1732	1742	S19	E56	4187	05	27.0	10	SN		3	C		22		
HOLL	22	1746	1747	1754	N17	E18	4183	05	24.1	8	SN		3	C		58		F
HOLL	22	1806	1806	1909	N17	E18	4183	05	24.1	63	SF		3	C		23		K
HOLL	22	1806	1823	1909	N17	E18	4183	05	24.1	63	SN		3	C		122		K
HOLL	22	1814	1815	1911	S20	E55	4187	05	27.0	57	SN		3	C		20		K
HOLL	22	1814	1822	1911	S20	E55	4187	05	27.0	57	SN		3	C		17		K
HOLL	22	2004	2005	2015	S30	W21	4179	05	21.2	11	SF		3	C		26		
HOLL	22	2033	2050	2107D	N17	E18	4183	05	24.2	34D	SF	C 2.4	3	C		33		
HOLL	22	2204	2210	2229	S19	E53	4187	05	27.0	25	SN		3	C		16		
HOLL	22	2320	2322	2338	N17	E16	4183	05	24.2	18	SN	C 1.5	3	C		35		F
YUNN	23	0056	0100	0120	N10	E90		05	29.8	24				C				A
YUNN	23	0133	0140	0152	N11	E90		05	29.8	19				C				A
YUNN	23	0137	0142	0213	S14	E54		05	27.2	36	SB			C		46	.8	F

MAY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp	Opt	Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
YUNN	23	0137	0152	0213	S16	E54		05	27.2	36	SB				C		62	1.1	K
GOES	23	0139	0151	0155						16		C	1.4						
YUNN	23	0202	0204	0220	S24	W12		05	22.2	18	SN				C		92	1.0	
LEAR	23	0534E	0546U	0615	N16	E13	4183	05	24.2	41D	SF			3	C		74		F
LEAR	23	0534E	0547U	0726	S20	E48	4187	05	26.9	112D	SF			3	C		78		F
YUNN	23	0546E	0546U	0554	N20	E09		05	23.9	8D	SN				P	0546	15	.2	
YUNN	23	0736E	0736U	0741D	S19	E48		05	27.0	5D	1N				P	0736	154	2.5	
LEAR	23	0736	0745	0820	S19	E48	4187	05	27.0	44	SN	C	1.0	3	C		49		FH
YUNN	23	0840	0841U	0841D	N17	E11		05	24.2	1D	SN				P	0841	154	1.7	
LEAR	23	0840	0841	0842D	N15	E06	4183	05	23.8	2D	SN	C	2.4	3	C		90		F
GOES	23	1049	1104	1111						22		C	1.8						
RAMY	23	1109E	1151	1313	S19	E46	4187	05	27.0	124D	1F			3	C		161		K
RAMY	23	1109E	1251	1313	S19	E46	4187	05	27.0	124D	SN			3	C		38		K
RAMY	23	1110E	1110U	1129	N16	E09	4183	05	24.1	19D	SF			3	C		24		
RAMY	23	1144	1145	1158	S08	W47		05	20.0	14	SF			3	C		35		
RAMY	23	1301	1302	1310	N07	W74	4174	05	18.0	9	SN	C	1.3	3	C		61		
RAMY	23	1323	1324	1331	N19	E04	4183	05	23.9	8	SN	C	1.2	3	C		26		
HOLL	23	1339	1339	1347	N19	E03	4183	05	23.8	8	SN	C	1.2	3	C		22		F
RAMY	23	1340	1340	1349	N19	E02	4183	05	23.7	9	SN	C	1.2	3	C		39		
HOLL	23	1415	1418	1431	N09	W76	4174	05	17.9	16	SN			3	C		70		
RAMY	23	1417	1417	1425	N07	W76	4174	05	17.9	8	SN			3	C		42		
HOLL	23	1510	1512	1528	N09	W76	4174	05	17.9	18	SF			3	C		20		
RAMY	23	1512	1515	1527	N07	W74	4174	05	18.1	15	SF			3	C		18		
HOLL	23	1535	1545	1604	N09	W77	4174	05	17.9	29	SF			3	C		26		
HOLL	23	1710	1719	1747	N18	E03	4183	05	23.9	37	SF	C	1.2	3	C		85		F
GOES	23	1815	1819	1828			4183			13		C	3.4						
HOLL	23	2053	2100	2159	S19	E41	4187	05	27.0	66	SF			3	C		39		F
HOLL	24	0011	0013	0051	N19	E00	4183	05	24.0	40	SN	C	1.4	3	C		36		
LEAR	24	0039	0045	0051	N19	W01	4183	05	24.0	12	SF			3	C		29		
LEAR	24	0125	0126	0144	N19	W07	4183	05	23.5	19	SF	C	1.0	3	C		34		
GOES	24	0541	0545	0547						6		B	8.7						
GOES	24	0602	0614	0618						16		C	1.2						
HOLL	24	1516	1521	1537	S16	E26	4187	05	26.6	21	SF	C	1.0	3	C		42		
HOLL	24	1520	1520	1529	N18	W06	4183	05	24.2	9	SF			3	C		26		F
GOES	24	1601	1605	1608						7		B	7.9						
HOLL	24	1928	1932	1941	S19	E29	4187	05	27.0	13	SF			3	C		25		
YUNN	25	0044	0048	0100	S17	E27		05	27.1	16	SN				C		92	1.1	D
LEAR	25	0046	0048	0105	S16	E27	4187	05	27.1	19	SF	C	1.2	3	C		126		F
YUNN	25	0125	0126	0136D	N14	W20		05	23.5	11D	SN				P		15	.2	D
LEAR	25	0145	0147	0206	N15	W13	4183	05	24.1	21	SF			3	C		50		F
LEAR	25	0356	0400	0422	N18	W17	4183	05	23.9	26	SN	C	3.6	3	C		161		F
GOES	25	0659	0703	0706						7		C	1.2						
KAND	25	0701	0705	0707	S20	E19		05	26.7	6	SF				C		35	.4	D
GOES	25	0726	0733	0737			4187			11		C	1.2						
KAND	25	0804	0806	0808	S20	E19		05	26.8	4	SF				C		21	.2	D
GOES	25	0829	0839	0845						16		C	1.1						
GOES	25	0902	0909	0913						11		C	2.0						
GOES	25	0946	0955	1002						16		M	2.2						
RAMY	25	1158	1204	1211	N17	W20	4183	05	24.0	13	SN	C	1.1	3	C		34		
RAMY	25	1405	1456	1637D	S17	E19	4187	05	27.0	152D	1N	C	2.4	3	C		302		
HOLL	25	1423	1456	1641	S18	E20	4187	05	27.1	138	1N	C	2.4	3	C		250		FK
HOLL	25	1423	1635	1641	S18	E20	4187	05	27.1	138	SN			3	C		36		K
HOLL	25	1633	1642	1726	N18	W22	4183	05	24.0	53	SF			3	C		59		K
HOLL	25	1633	1655	1726	N18	W22	4183	05	24.0	53	SF			3	C		74		K
GOES	25	1820	1826	1832						12		C	1.1						
GOES	25	1905	1913	1916						11		C	1.2						
HOLL	25	2011E	2013U	2024	N19	W21	4183	05	24.2	13D	SN	C	1.1	3	C		29		F
GOES	25	2043	2048	2055						12		C	1.3						
HOLL	25	2059E	2059U	2109	N19	W22	4183	05	24.2	10D	SF			2	C		20		F
HOLL	25	2119E	2119U	2128	S17	E21	4187	05	27.5	9D	SF			2	C		22		
PALE	25	2204E	2222U	2239D	S19	E14	4187	05	27.0	35D	SN	C	1.9	3	C		44		
GOES	25	2321	2327	2332						11		C	5.7						
LEAR	25	2346	2355	0030	N09	E52	4191	05	29.9	44	1F	C	2.2	2	C		164		F
YUNN	26	0010E	0014U	0030	N10	E48		05	29.6	20D	SN				P	0014	123	1.9	E
LEAR	26	0024	0025	0040	N17	W26	4183	05	24.0	16	SF			3	C		68		F
LEAR	26	0117	0118	0123	N18	W30	4183	05	23.8	6	SF			3	C		58		
GOES	26	0231	0234	0240						9		B	7.6						
GOES	26	0450	0455	0502						12		B	9.6						

H - ALPHA SOLAR FLARES

MAY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Obs See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	26	0756	0757	0806	N18	W34	4183	05	23.7	10	SF		3	C		26		F
KAND	26	1210	1218	1236	N10	E40		05	29.5	26	SF			C		21	.3	E
HOLL	26	1247	1249U	1318	N12	E40	4191	05	29.5	31	SF	C 1.2	2	C		60		
HOLL	26	1719	1720	1729	S15	E05	4187	05	27.1	10	SF		3	C		49		
RAMY	26	1759	1800	1807	S11	W12	4193	05	25.8	8	SF		3	C		25		F
HOLL	26	1759	1800	1817	S11	W11	4193	05	25.9	18	SN		3	C		34		F
HOLL	26	2011	2030	2047	S19	E02	4187	05	27.0	36	SF	C 1.1	3	C		41		F
LEAR	26	2346	2355	0011D	S11	E35	4191	05	29.6	25D	1F		2	C		164		F
LEAR	27	0055	0059	0112	S10	W16	4193	05	25.8	17	SF	B 6.0	3	C		28		F
LEAR	27	0837	0838	0849	S18	W03	4187	05	27.1	12	SF		3	C		34		
GOES	27	1112	1115	1124						12		B 9.1						
CATA	27	1120E	1125	1135D	S09	E62		06	1.1	15D	S			P	1125	56	1.2	
HOLL	27	1431	1432	1439	S12	W41	4186	05	24.5	8	SF		3	C		22		
RAMY	27	1646	1748	1827	S11	W25	4193	05	25.8	101	1N		3	C		238		F
HOLL	27	1650	1659	1833	S09	W25	4193	05	25.8	103	SN		3	C		75		K
HOLL	27	1650	1747	1833	S09	W25	4193	05	25.8	103	SN	B 9.9	3	C		126		FK
GOES	27	1745	1750	1803			4193			18		C 1.0						
HOLL	27	1807	1808	1832	S11	E72	4196	06	2.2	25	SF		3	C		16		F
HOLL	27	1854	1857	1914	S10	E57		06	1.1	20	SF	B 8.3	3	C		53		F
GOES	27	2117	2130	2140						23		C 2.1						
GOES	27	2145	2200	2240						55		C 2.3						
HOLL	27	2248	2248	2307	N16	W02	4189	05	27.8	19	SF		3	C		48		F
GOES	28	0001	0058	0142						101		M 1.1						
GOES	28	0458	0500	0506						8		C 2.0						
YUNN	28	0714E	0714U	0716D	S12	E65		06	2.2	2D	SN			P	0714	31	.7	D
BUCA	28	0715E		0720	S11	E65		06	2.2	5D	SN			C	0715	43	1.0	D
CATA	28	0845	0910	0920	S12	E64		06	2.2	35	S			C	0910	56	1.3	
GOES	29	0047	0052	0054						7		C 1.3						
LEAR	29	0116	0118	0127	S11	E37	4199	05	31.8	11	SN	C 2.2	3	C		133		
GOES	29	0207	0216	0223						16		C 2.1						
GOES	29	0510	0514	0519						9		B 9.9						
CATA	29	0920	0930	0935D	S07	E90		06	5.1	15D	1	B 9.8		P	0930	68		
GOES	29	0927	0930	0938						11		B 9.8						
GOES	29	1030	1053	1110						40		B 9.6						
RAMY	29	1115	1120	1130	S18	W40	4187	05	26.4	15	SF		3	C		28		
RAMY	29	1136	1138	1144	S11	E47	4196	06	2.0	8	SF		3	C		36		
RAMY	29	1323	1323	1330	S10	E77		06	4.3	7	SF	B 8.2	3	C		25		
RAMY	29	1514	1514	1540D	S07	E90	4201	06	5.4	26D	SF		3	C		27		
HOLL	29	1540	1541	1552	S11	E43	4196	06	1.9	12	SF		3	C		34		F
HOLL	29	1607	1615	1625	S09	E40	4196	06	1.7	18	SF	B 9.8	3	C		62		F
HOLL	29	1840	1843	1845	S10	E90	4201	06	5.5	5	SF		3	C		10		
RAMY	29	1841	1843	1850	S10	E83	4201	06	5.0	9	SF		3	C		12		
GOES	29	2118	2122	2126						8		C 1.0						
GOES	30	0039	0042	0047						8		B 7.8						
LEAR	30	0121	0121	0125	S11	E84	4201	06	5.4	4	SF	B 9.3	3	C				
LEAR	30	0255	0257	0301	S11	E84	4201	06	5.4	6	SF	C 1.2	3	C				
LEAR	30	0310	0312	0323	S18	W48	4187	05	26.5	13	SF		3	C		22		
YUNN	30	0424E	0437	0451D	S12	W90		05	23.4	27D				P				A
GOES	30	0441	0447	0505			4200			24		C 5.6						
GOES	30	0628	0631	0635						7		C 1.1						
GOES	30	0739	0743	0746						7		C 1.3						
GOES	30	0834	0858	0915						41		C 3.5						
RAMY	30	1044	1049	1157	S07	E77	4201	06	5.2	73	SN		3	C		40		K
RAMY	30	1044	1133	1157	S07	E77	4201	06	5.2	73	SN	C 1.2	3	C		27		FK
RAMY	30	1206	1213	1224	S06	E77	4201	06	5.3	18	SF		3	C		30		
GOES	30	1334	1342	1344						10		C 2.1						
HOLL	30	1448	1451	1513	S12	E70	4201	06	4.9	25	SF	C 1.8	3	C		35		F
HOLL	30	1623	1630	1730D	S12	E73	4201	06	5.2	67D	SF	C 5.0	3	C		90		F
RAMY	30	1624E	1702	1706D	S10	E70	4201	06	4.9	42D	1F		3	C		108		F
GOES	30	2115	2118	2120						5		C 1.1						
GOES	30	2258	2328	0149						171		C 7.9						
LEAR	31	0252	0257	0302	S13	E18	4196	06	1.5	10	SF		3	C		29		F
PALE	31	0317	0331	0353D	S09	E68	4201	06	5.2	36D	SF	C 3.8	3	C		48		
LEAR	31	0319	0319	0335	S11	E67	4201	06	5.2	16	SF		3	C		15		FK
LEAR	31	0319	0330	0335	S11	E67	4201	06	5.2	16	SF	C 3.8	3	C		28		K
LEAR	31	0700	0713	0723	S16	W62	4187	05	26.6	23	SF	C 2.4	3	C		93		

H - ALPHA SOLAR FLARES

MAY 1983

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	Imp See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10-6 Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	31	0925	0928	0930						5		C 2.1						
GOES	31	0940	0947	0953						13		C 2.5						
RAMY	31	1141	1141	1148	S11	E16	4196	06	1.7	7	SF		3	C		21		
RAMY	31	1155	1201	1210	S09	E62	4201	06	5.2	15	SF		3	C		20		
RAMY	31	1255	1302	1307	S12	E64	4201	06	5.4	12	SN	C 3.0	3	C		21		
HOLL	31	1336	1350U	1356D	S11	E63	4201	06	5.3	20D	SB	C 7.9	1	C		125		E
RAMY	31	1348	1350	1416	S10	E65	4201	06	5.5	28	1B	C 7.9	3	C		192		
RAMY	31	1459	1505	1521	S12	E65	4201	06	5.5	22	SN	M 1.2	3	C		48		
HOLL	31	1656	1656	1706	S10	E50	4201	06	4.5	10	SN		3	C		77		
HOLL	31	1711	1730	1741	S11	E61	4201	06	5.3	30	SF		3	C		38		
HOLL	31	1758	1805	1959	S11	E62	4201	06	5.4	121	SN		2	C		48		K
HOLL	31	1758	1826	1959	S11	E62	4201	06	5.4	121	1B	C 9.0	2	C		195		UFK
RAMY	31	1810	1815	1954D	S11	E62	4201	06	5.4	104D	SB		3	C		144		K
RAMY	31	1810	1826	1954D	S11	E62	4201	06	5.4	104D	SB	C 9.0	3	C		126		K
GOES	31	1907	1913	1921			4201			14		C 4.2						
GOES	31	2010	2013	2015						5		C 2.1						
HOLL	31	2017	2018	2039	S11	E71	4201	06	6.2	22	SN	C 2.9	2	C		63		F
HOLL	31	2045	2046	2050	S12	E60	4201	06	5.4	5	SN		3	C		30		
HOLL	31	2100	2102	2108	S11	E60	4201	0	5.4	8	SF	C 2.1	2	C		26		
HOLL	31	2100	2119	2123	S11	E10	4196	06	1.6	23	SF		2	C		37		F
HOLL	31	2343	2343	0024	S12	E55	4201	06	5.1	41	SF		2	C		22		K
HOLL	31	2343	2350	0024	S12	E55	4201	06	5.1	41	SN	C 1.5	2	C		59		FK

"Remarks":

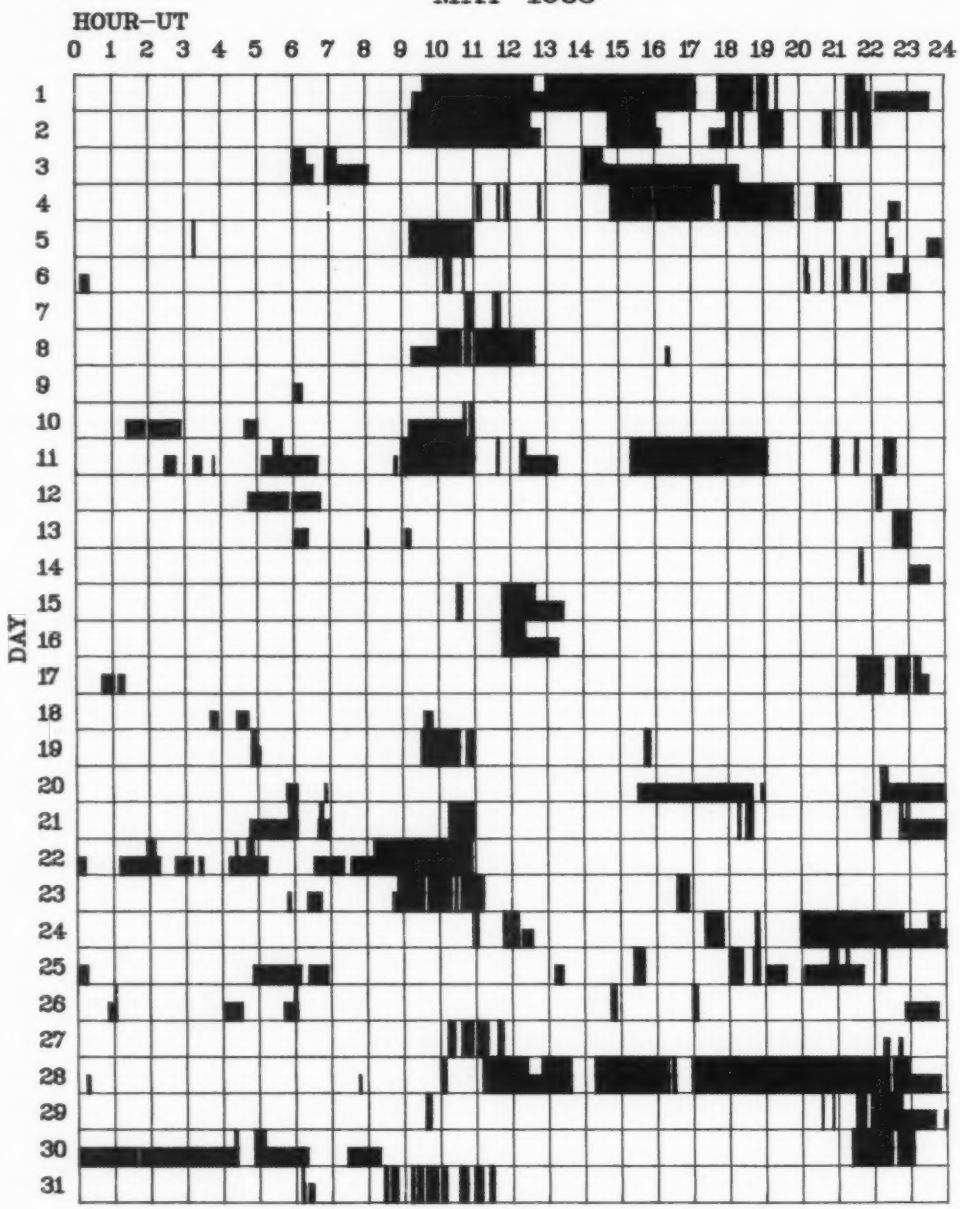
A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of Ca II.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

The 4-digit number appearing under "Remarks" denotes the calcium plage region number assigned by the Space Environment Services Center in Boulder, Colorado.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

MAY 1983

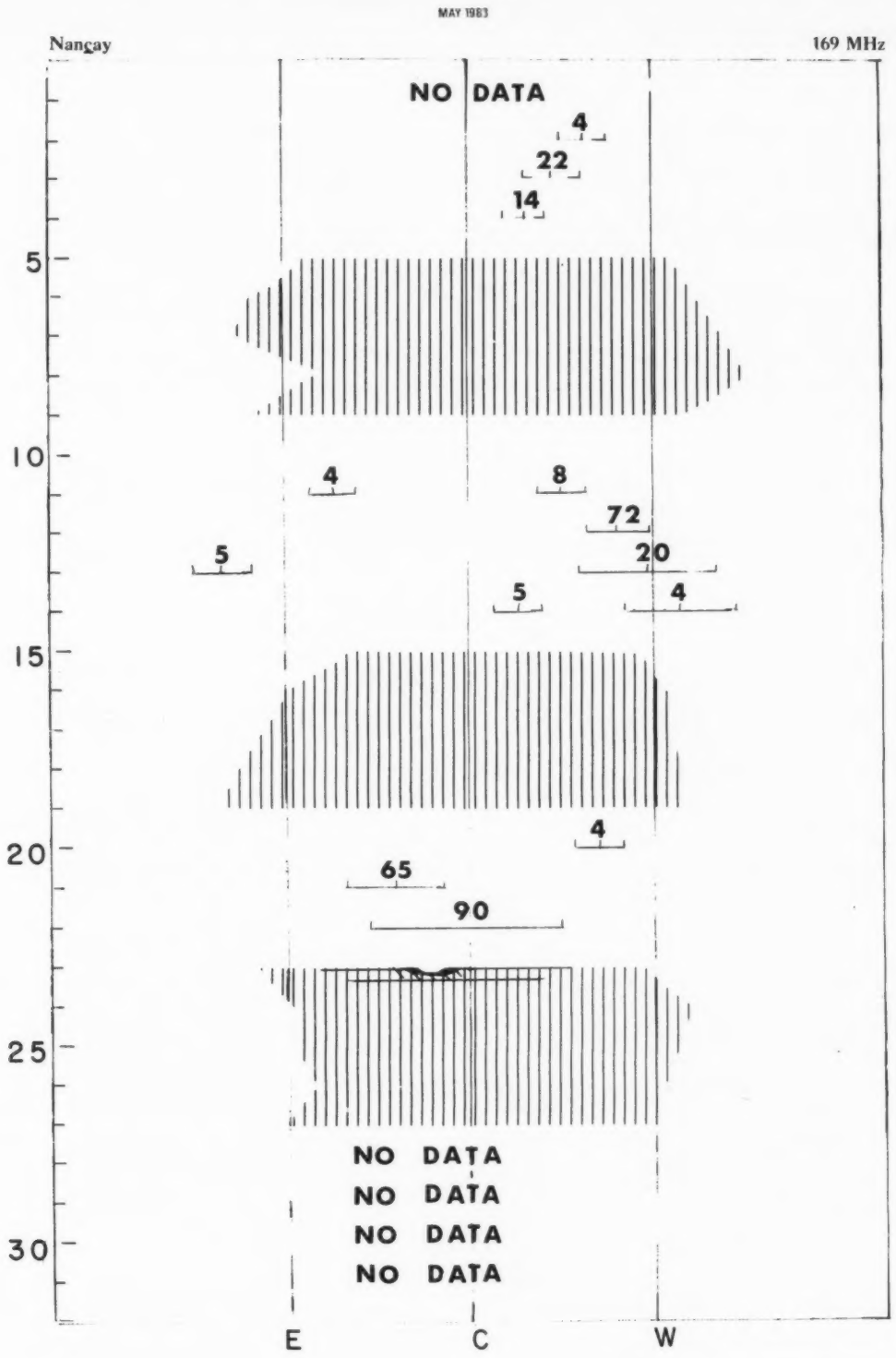


Observatories included in total patrol:

Bucharest	Holloman	Learmonth	Palehua	Ramey
Catania	Kandilli	Manila	Peking	Wendelstein
				Yunnan

Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

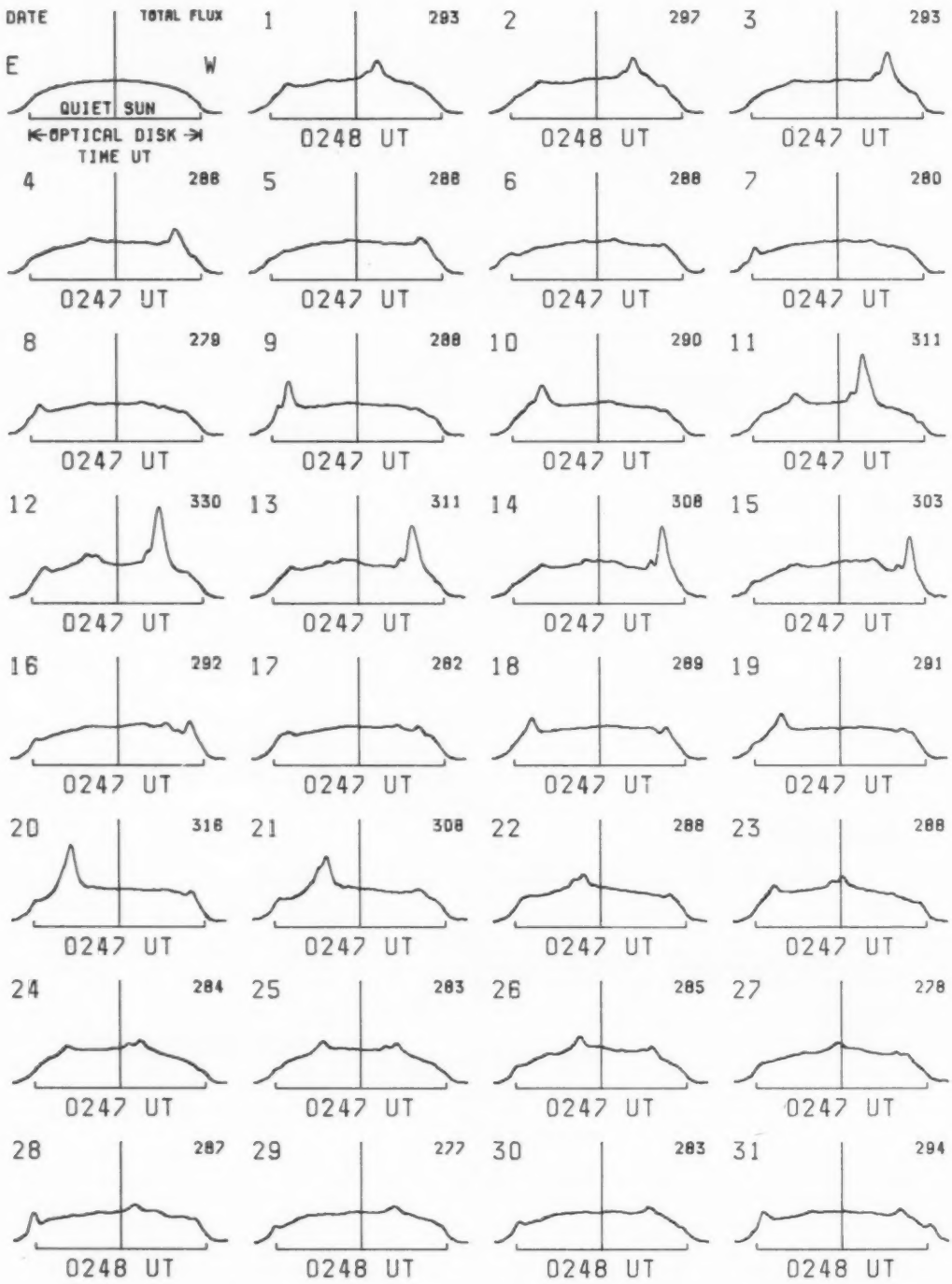


EAST-WEST SOLAR SCANS

MAY 1983

TOYOKAWA, JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

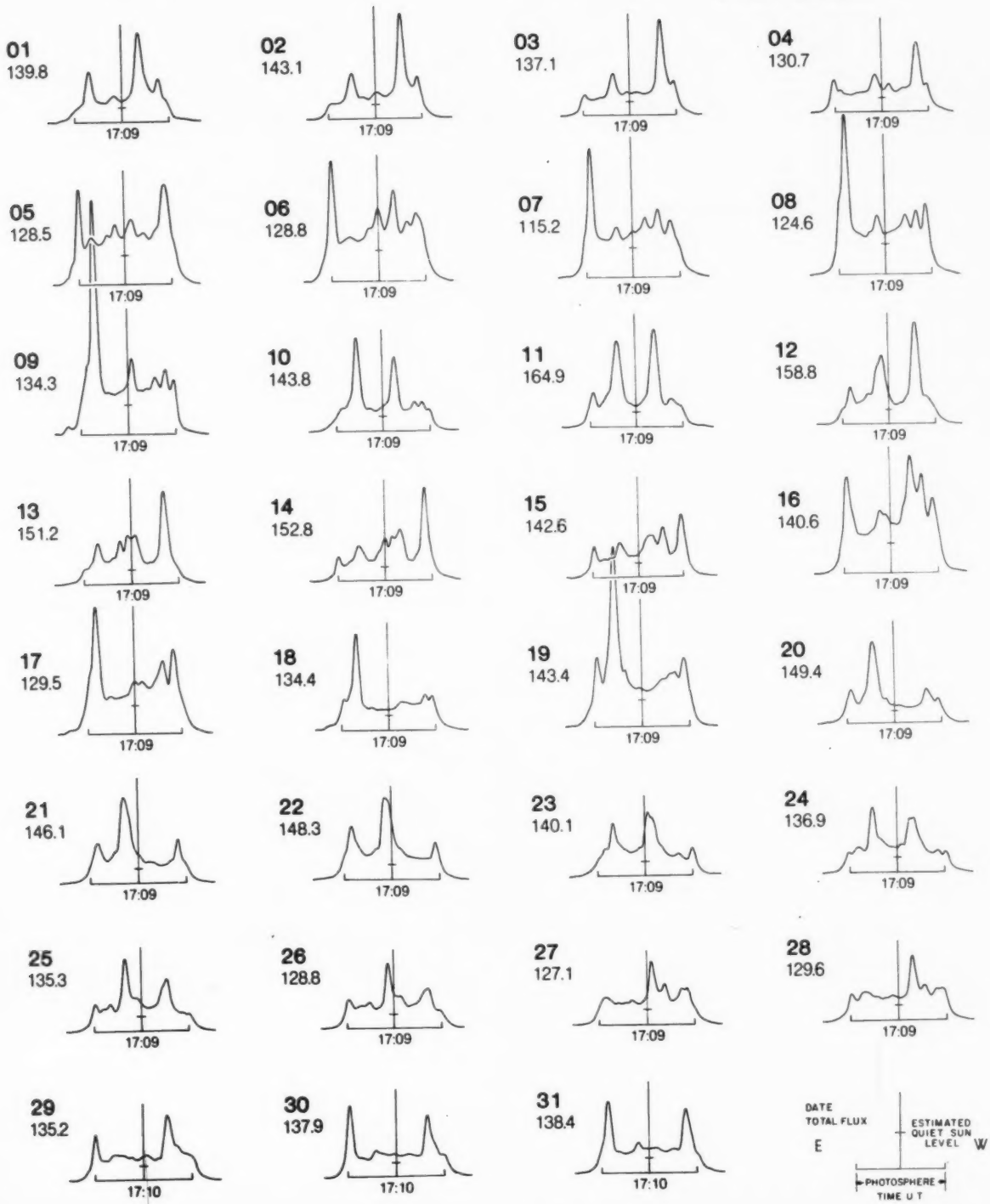


EAST-WEST SOLAR SCANS

MAY 1983

ALGONQUIN RADIO OBSERVATORY
CANADA

10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution

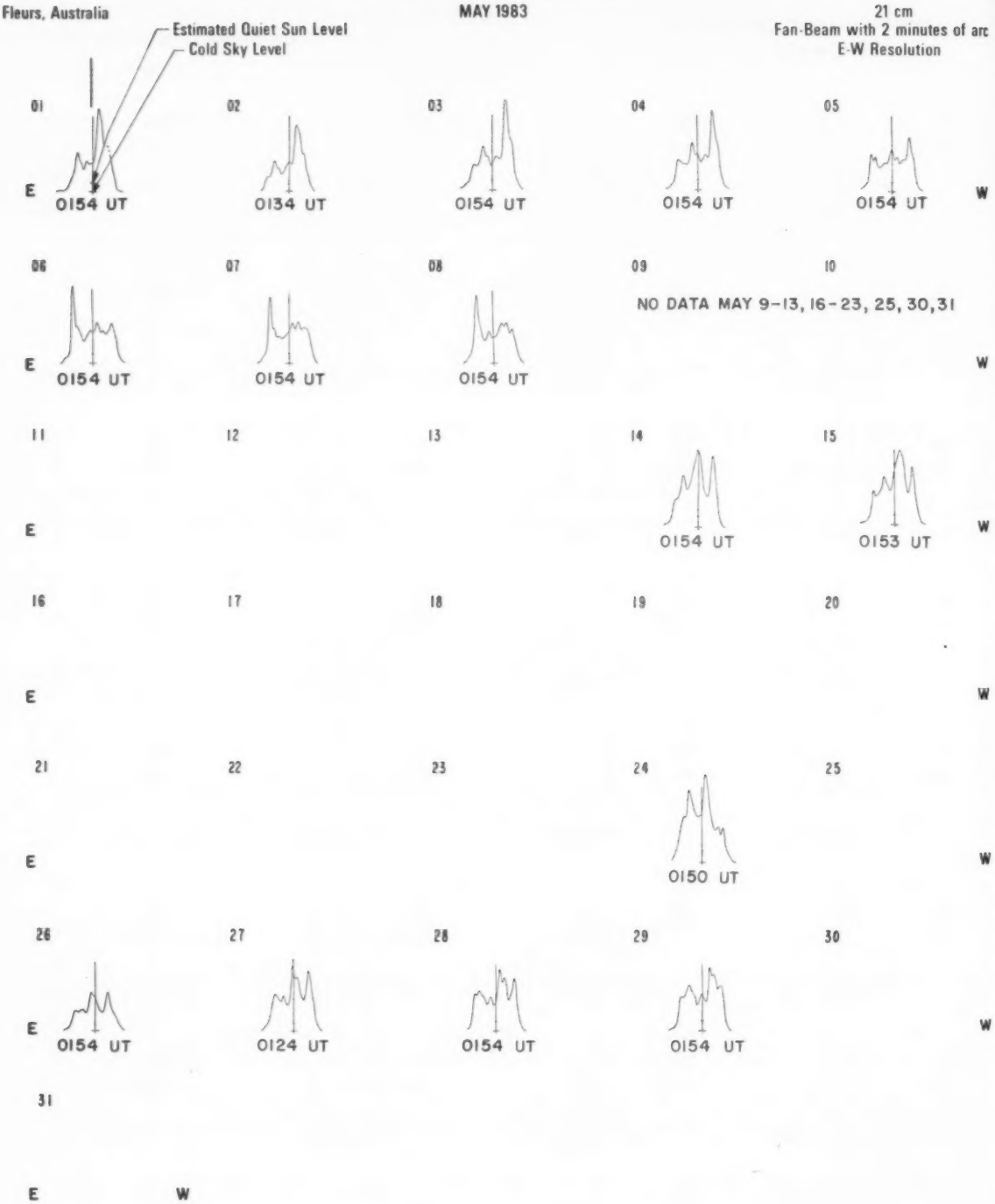


EAST-WEST SOLAR SCANS

Fleurs, Australia

MAY 1983

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution

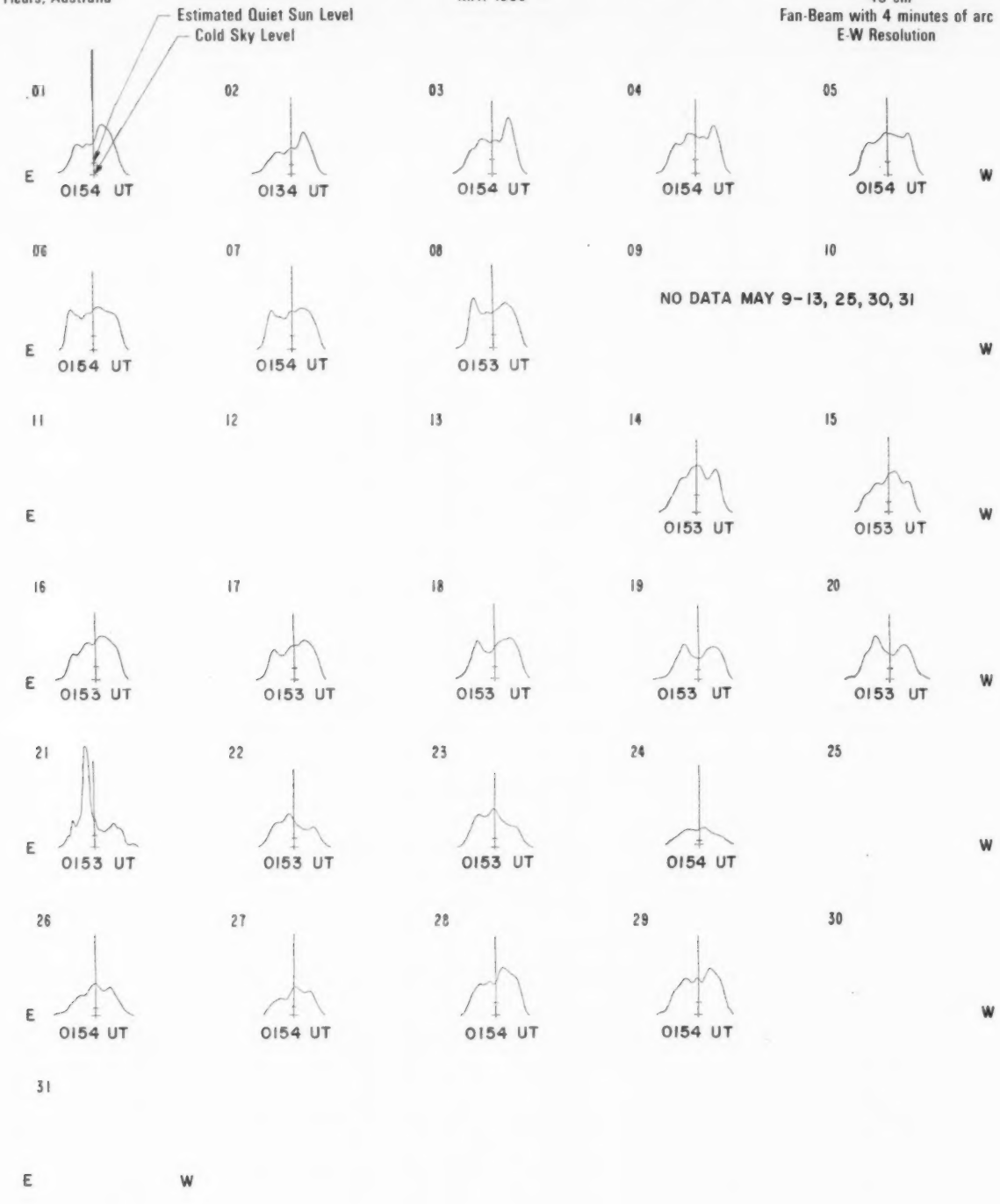


EAST-WEST SOLAR SCANS

Fleurs, Australia

MAY 1983

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
01	8800	LEAR	4	S/F	0256.3	0256.6	2.3	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0256.5	0257.1	2.3	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	0711.1	0716.8	12.7	20.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0714.8	0719.8	8.0	10.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0715.5	0718.8	13.1	11.0			QL=6 ST=3 TYP=3
	8800	ATHN	4	S/F	0716.5	0719.8	12.1	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0803.6	0804.6	1.5	9.0			QL=5 ST=2 TYP=3
	2695	LEAR	8	S	0804.3	0804.6	.7	4.0			QL=5 ST=2 TYP=3
	2800	OTTA	20	GRF	1149.0	1150.0	30.0	3.6	1.8		
	8800	ATHN	4	S/F	1303.1	1313.8	17.4	11.0			QL=6 ST=3 TYP=3
	8800	ATHN	4	S/F	1304.1	1314.8	18.4	11.0			QL=6 ST=3 TYP=3
	2800	OTTA	20	GRF	1310.0	1325.0	45.0	4.0	2.0		
	2800	OTTA	20	GRF	1545.0	1547.0	11.0	3.8	1.3		
	2800	OTTA	260	FAL	1556.0	1603.0	7.0	-3.0	-1.5		
	2800	OTTA	1	S	1714.8	1715.0	1.0	2.6	1.4		
	2800	OTTA	23	GRF	1835.0	2335.0	420.0D	30.0			
	2800	OTTA	4	S/F	1836.0	1839.8	5.0	10.2	4.0		
	2800	OTTA	23	GRF	1836.0	1847.0	105.0	8.2	4.1		
	2695	SGMR	4	S/F	1837.3	1839.8	3.2	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	2041.0	2100.0	75.0	13.8	8.0		
	2800	OTTA	4	S/F	2044.5	2049.7	10.0	13.6	6.8		
	2695	SGMR	20	GRF	2047.0	2049.6	3.0	22.0			QL=6 ST=2 TYP=2
	8800	SGMR	20	GRF	2051.6	2051.8	.4	22.0			QL=6 ST=2 TYP=2
	2695	PENT	4	S/F	2252.0	2258.0	13.0	27.0	14.6		
	8800	PALE	8	S	2254.5	2255.0	.6	15.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	2304.6E	2311.1	9.9D	40.0			QL=4 ST=2 TYP=3
	2695	PENT	29	PBI	2305.0	2305.0	25.0	8.2	4.1		
	8800	PALE	20	GRF	2305.1	2309.6	12.2	24.0			QL=6 ST=2 TYP=2
02	2695	LEAR	8	S	0137.5	0137.6	.3	6.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0137.5	0137.6	.6	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	1555.6	1555.6	.1	3.8			
	2800	OTTA	8	S	1558.0	1558.0	.5	3.8			
	2800	OTTA	27A	RF	1705.0		395.0	6.0	4.5		
	2800	OTTA	24	R	1705.0	1840.0	95.0	6.0	2.0		
	2800	OTTA	3	S	1829.5	1831.5	5.0	15.2	5.1		
	8800	SGMR	8	S	1831.1	1831.3	.5	27.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1831.3	1831.8	.7	16.0			QL=6 ST=2 TYP=3
	2800	OTTA	24P	R	1840.0		230.0	6.0			
	2695	PENT	26	FAL	2230.0	2340.0	70.0	-6.0	-3.0		
03	2695	PENT	240	R	0007.0	0010.0	3.0	2.8	1.4		
	2695	PENT	1	S	0113.5	0113.9	1.0	1.6	0.8		
	2800	OTTA	20	GRF	1000.0	1200.0	120.0D	4.2	2.0		
	2800	OTTA	260	FAL	1140.0	1205.0	25.0	-3.0	-1.5		
	2800	OTTA	20	GRF	1220.0	1235.0	130.0	3.0	1.5		
	2800	OTTA	26A	FAL	1520.0	1650.0	90.0	-3.0	-1.5		
	2800	OTTA	20	GRF	1600.0	1615.0	40.0	2.2	1.1		
	2800	OTTA	21	GRF	2040.0	2145.0	220.0	7.2	2.4		
	2800	OTTA	3	S	2138.0	2139.5	8.0	22.4	7.4		
	2695	SGMR	4	S/F	2138.5	2139.1	2.5	28.0			QL=6 ST=2 TYP=3
04	8800	LEAR	8	S	0444.1	0444.1	.2	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1119.0	1120.0	10.0	3.0	1.2		
	2800	OTTA	22	GRF	1824.0	1840.0	40.0	3.0	1.3		
05	2695	PENT	20	GRF	0005.0	0020.0	75.0	7.2	3.2		
	2695	LEAR	4	S/F	0017.1	0019.1	3.9	23.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0546.6	0551.8	17.0	13.0			QL=5 ST=2 TYP=3
	8800	ATHN	4	S/F	0546.8	0552.6	14.2	22.0			QL=5 ST=2 TYP=3
	2695	LEAR	4	S/F	0914.0	0915.1	4.8	29.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0914.3	0915.3	2.2	38.0			QL=5 ST=2 TYP=3
	8400	BERN	45	C	0914.5	0915.8	6.0	29.0			
	8800	ATHN	8	S	0914.6	0915.8	1.9	13.0			QL=5 ST=2 TYP=3
	2800	OTTA	20	GRF	1135.0	1205.0	100.0	3.0	2.1		
	2800	OTTA	1	S	1328.0	1359.5	31.5D	8.6	4.2		
	2695	SGMR	20	GRF	1358.8	1359.3	1.3	20.0			QL=6 ST=2 TYP=2
	2695	ATHN	8	S	1359.0	1359.3	1.3	8.0			QL=5 ST=2 TYP=3
	2800	OTTA	29	PBI	1400.2	1400.2	12.0	4.4			
	2800	OTTA	20	GRF	1420.0	1430.0	30.0	3.0	1.8		
	2800	OTTA	240	R	1740.0	1800.0	20.0	2.0	1.0		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
05	2800	OTTA	240AR	1850.0	1925.0	35.0	3.0			
	2800	OTTA	21 GRF	1900.0	1912.0	25.0	5.0	3.0		
	2800	OTTA	1 S	1900.5	1901.0	1.0	3.0	1.3		
	2695	SGMR	8 S	2010.3	2010.8	1.5	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	240 R	2110.0	2140.0	30.0	2.2	1.0		
	2695	PENT	20 GRF	2330.0	2355.0	50.0	2.2	1.1		
06	2695	PENT	20 GRF	0040.0	0100.0	60.0	2.2	1.4		
	8800	LEAR	8 S	0732.6	0733.3	1.2	10.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0733.1	0733.3	1.5	2.0			QL=6 ST=2 TYP=3
	2800	OTTA	22 GRF	1240.0	1530.0	390.0	8.0	4.0		
07	2695	PENT	21 GRF	0130.0	0137.0	14.0	7.2	4.0		
	2695	PENT	40 F	0134.0	0134.5	2.0	42.0			
	2695	LEAR	8 S	0134.6	0134.6	.2	32.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0743.3	0744.3	4.8	18.0			QL=6 ST=3 TYP=3
	8400	BERN	45 C	0743.4	0744.4	7.0	40.0			
	8800	ATHN	4 S/F	0743.6	0744.3	3.7	18.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1036.6	1038.1	1.7	20.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	1037.0	1037.6	2.5	13.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	1043.1	1044.3	3.9	15.0			QL=6 ST=3 TYP=3
	2695	SGMR	8 S	1044.0	1044.5	.8	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1155.0	1207.0	30.0	3.0	1.6		
	2800	OTTA	1 S	1200.3	1201.0	1.5	3.4	1.5		
	2800	OTTA	20 GRF	1305.0	1315.0	50.0	2.4	1.2		
	2695	SGMR	20 GRF	1311.1	1315.8	19.0	20.0			QL=6 ST=2 TYP=2
	8800	ATHN	8 S	1401.6	1402.8	2.0	15.0			QL=5 ST=2 TYP=3
	2800	OTTA	260 FAL	1420.0	1445.0	25.0	-3.0	-1.5		
	2800	OTTA	1 S	1537.0	1538.0	2.0	3.8	1.8		
	2695	ATHN	4 S/F	1537.0	1537.3	2.8	5.0			QL=6 ST=2 TYP=3
	8400	BERN	8 S	1714.3	1714.5	.5	155.0			
	8800	PALE	47 GB	1714.5	1714.6	.3	65.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1714.5	1714.6	.3	92.0			QL=6 ST=2 TYP=5
	8800	SGMR	47 GB	1919.1	1919.3	.7	82.0			QL=6 ST=2 TYP=5
	2800	OTTA	240AR	1926.0	1929.0	3.0	2.8	1.4		
	2800	OTTA	3 S	1926.2	1927.0	2.0	11.0	4.0		
	8800	SGMR	47 GB	1926.6	1927.1	1.4	78.0			QL=6 ST=2 TYP=5
	2695	SGMR	4 S/F	1926.6	1927.1	2.5	13.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1926.8	1927.0	.5	29.0			QL=6 ST=2 TYP=3
	8800	PALE	49 GB	2216.1	2218.5	13.5	5100.0			QL=6 ST=2 TYP=7
	8800	SGMR	49 GB	2216.5	2218.5	5.6	3000.0			QL=6 ST=2 TYP=7
	2800	OTTA	47 GB	2216.5	2219.5	8.5	640.0	157.0		
	2695	SGMR	49 GB	2216.6	2219.3	26.0	610.0			QL=6 ST=2 TYP=7
	2800	OTTA	30 PBI	2225.0	2225.0	20.0	21.0	10.5		
	2800	OTTA	8 S	2227.7	2227.8	.3	6.4	3.2		
	2800	OTTA	1 S	2233.0	2235.0	3.0	4.2	2.8		
	2695	PENT	8 S	2333.9	2333.9	.1	6.6			
08	2695	LEAR	49 GB	0246.1	0304.1	32.5	990.0			QL=6 ST=2 TYP=6
	8800	LEAR	47 GB	C251.8	0305.6	26.8	360.0			QL=6 ST=2 TYP=5
	8800	PALE	8 S	0254.0	0254.3	.5	15.0			QL=6 ST=2 TYP=3
	8800	PALE	49 GB	0258.6	0305.6	20.2	350.0			QL=6 ST=2 TYP=7
	2695	LEAR	49 GB	0318.6	0318.8	44.4	2699.0			QL=6 ST=3 TYP=6
	8800	LEAR	49 GB	0318.6	0318.8	49.2	1600.0			QL=6 ST=2 TYP=6
	8800	PALE	49 GB	0318.8	0318.8	26.3	1300.0			QL=6 ST=2 TYP=7
	8800	ATHN	8 S	1143.3	1144.3	1.8	23.0			QL=5 ST=2 TYP=3
	2800	OTTA	20 GRF	1730.0	1835.0	195.0	3.0	1.5		
	2695	PENT	240 R	2220.0	2315.0	55.0	3.6			
	2695	PENT	21 GRF	2345.0	2355.0	65.0	3.6	1.4		
	2695	LEAR	4 S/F	2350.0	2351.1	2.3	8.0			QL=6 ST=2 TYP=3
	2695	PENT	1 S	2351.0	2351.3	1.5	1.8	0.9		
09	8800	LEAR	4 S/F	0402.0	0403.0	5.1	5.0			QL=6 ST=2 TYP=3
	8800	LEAR	20 GRF	0431.8	0440.0	32.2	8.0			QL=6 ST=2 TYP=2
	8800	LEAR	8 S	0525.1	0525.6	1.2	10.0			QL=6 ST=2 TYP=3
	2800	OTTA	2 S/F	1202.5	1202.8	3.0	6.0	2.6		
	2695	ATHN	4 S/F	1202.6	1203.6	3.7	8.0			QL=6 ST=2 TYP=3
	2800	OTTA	20 GRF	1300.0	1308.0	30.0	3.6	1.6		
	8800	ATHN	4 S/F	1325.3	1327.6	4.5	15.0			QL=5 ST=2 TYP=3
	2695	PENT	240 R	1403.0	1407.0	4.0	1.6	0.8		
	8800	ATHN	47 GB	1410.6	1412.1	3.9	92.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
09	8400	BERN	3	S	1411.0	1412.1	18.0	100.0			
	2695	ATHN	4	S/F	1411.3	1412.3	3.2	46.0			QL=6 ST=2 TYP=3
	2695	PENT	3	S	1411.5	1412.2	3.5	42.0	14.0		
	2800	OTTA	29	PBI	1415.0	1415.0	75.0	5.2	2.6		
	2800	OTTA	21	GRF	1545.0	1700.0	195.0	4.6	3.0		
	2800	OTTA	40	F	1732.5	1737.5	10.0	2.2			
	2800	OTTA	1	S	1749.0	1751.2	8.0	5.2	1.8		
	2800	OTTA	1	S	2020.8	2021.4	2.0	4.0	2.0		
	2800	OTTA	20	GRF	2105.0	2110.0	40.0	4.0	1.8		
	8800	LEAR	49	GB	2303.0	2306.1	26.6	1199.0			QL=6 ST=2 TYP=6
	2695	LEAR	47	GB	2303.0	2307.5	25.8	310.0			QL=6 ST=2 TYP=5
	8800	PALE	49	GB	2303.6	2305.6	23.2	2000.0			QL=6 ST=2 TYP=7
	2695	PENT	46F	C	2304.0	2307.2	14.0	320.0	98.0		
	8800	SGMR	49	GB	2304.0	2306.3	7.3	1399.0			QL=4 ST=3 TYP=7
	2695	SGMR	49	GB	2304.3	2307.3	6.0	270.0			QL=4 ST=3 TYP=7
	2695	PENT	29	PBI	2318.0	2318.0	22.0	9.8	3.2		
	2695	PENT	31	ABS	2340.0	2355.0	40.0	-2.6	-1.5		
10	2695	PENT	240	AR	0003.0	0041.0	38.0	5.8	2.8		
	2695	PENT	4	S/F	0004.0	0005.5	6.0	13.6	4.6		
	8800	ATHN	4	S/F	0438.6	0441.0	4.4	13.0			QL=5 ST=2 TYP=3
	2800	OTTA	4	S/F	1207.0	1212.7	11.0	145.0	66.6		
	2695	ATHN	47	GB	1207.3	1212.3	11.0	130.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1207.3	1212.4	13.0	216.0			
	2695	SGMR	47	GB	1207.6	1212.3		169.0			QL=6 ST=1 TYP=5
	8800	ATHN	47	GB	1207.6	1212.3	14.0	160.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1208.3	1212.3		139.0			QL=6 ST=1 TYP=5
	2800	OTTA	30	PBI	1218.0	1218.0	335.0	8.6	4.0		
	2800	OTTA	20	GRF	1450.0	1525.0	80.0	4.6	2.8		
	2800	OTTA	20	GRF	1620.0	1650.0	80.0	5.2	2.8		
	2800	OTTA	20	GRF	1815.0	1845.0	165.0	10.4	3.6		
	2800	OTTA	20	GRF	2110.0	2135.0	40.0	1.8	1.0		
	2800	OTTA	20	GRF	2200.0	2215.0	30.0	2.4	1.2		
	2695	PENT	240	R	2325.0	2340.0	15.0	3.4	1.7		
11	8800	LEAR	4	S/F	0004.6	0005.5	2.9	22.0			QL=5 ST=2 TYP=3
	8800	PALE	47	GB	0005.0	0005.6	1.5	80.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0005.1	0005.8	2.7	11.0			QL=5 ST=2 TYP=3
	2695	PENT	1	S	0021.5	0021.8	1.0	3.2	1.6		
	8800	ATHN	47	GB	0350.1E	0400.1	20.0D	119.0			QL=2 ST=2 TYP=5
	2695	ATHN	47	GB	0351.1E	0400.0	13.2D	62.0			QL=2 ST=2 TYP=5
	8800	LEAR	47	GB	0358.0	0400.1	7.6	139.0			QL=6 ST=2 TYP=5
	2695	LEAR	47	GB	0358.0	0400.1	7.0	72.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0359.1	0359.8	3.9	119.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	0553.6	0554.6	3.7	28.0			QL=6 ST=2 TYP=3
	8400	BERN	4	S/F	0554.0	0554.9	5.5	40.0			
	2695	ATHN	4	S/F	0554.1	0554.6	3.2	7.0			QL=6 ST=2 TYP=3
	2800	OTTA	23	GRF	1050.0	1500.0	660.0	18.8			
	2695	ATHN	20	GRF	1052.5	1108.0	26.5	7.0			QL=6 ST=2 TYP=2
	8800	ATHN	20	GRF	1052.5	1140.0	62.5	28.0			QL=6 ST=2 TYP=2
	2695	SGMR	8	S	1054.5	1054.8	.5	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1157.0	1157.3	5.0	3.8	1.8		
	2695	ATHN	4	S/F	1157.3	1157.5	2.2	7.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1157.3	1157.5	2.2	7.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1203.5	1204.0	1.0	3.2	1.5		
	2695	ATHN	8	S	1203.6	1204.1	1.0	9.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1226.1	1226.8	.7	15.0			QL=6 ST=2 TYP=3
	8800	ATHN	20	GRF	1311.5	1330.8	58.0	39.0			QL=6 ST=2 TYP=2
	2695	ATHN	20	GRF	1313.5	1344.3	56.0	7.0			QL=6 ST=2 TYP=2
	8800	SGMR	4	S/F	1323.6	1326.3	7.5	25.0			QL=6 ST=2 TYP=3
	8400	BERN	23	GRF	1418.0	1449.1	45.0U	208.0			
	2800	OTTA	2	S/F	1418.5	1421.0	8.0	9.2	4.4		
	2800	OTTA	28	PRE	1430.0	1444.8	17.2	20.0			
	2800	OTTA	45	C	1447.2	1449.0	8.5	144.0	38.6		
	2800	OTTA	1	S	1512.5	1514.0	3.0	2.8	1.3		
	8400	BERN	4	S/F	1612.6	1613.8	6.0	27.0			
	2800	OTTA	4	S/F	1612.8	1613.7	5.0	27.0	6.8		
	2800	OTTA	1	S	1930.2	1930.8	1.5	6.6	3.3		
	2800	OTTA	1	S	1932.3	1932.5	1.0	7.8	2.6		
	2695	SGMR	4	S/F	1940.1	1941.5	3.0	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1940.2	1941.5	8.0	13.8	3.6		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
11	8800	SGMR	8 S	1941.0	1941.6	2.0	18.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1941.1	1941.5	1.2	29.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	2004.3	2004.6	1.0	29.0			QL=6 ST=2 TYP=3
	2695	PENT	1 S	2006.0	2006.7	2.0	2.4	1.2		
	8800	PALE	8 S	2059.1	2059.1	.2	16.0			QL=6 ST=2 TYP=3
	2695	PENT	240AR	2205.0	2220.0	15.0	3.8	1.9		
	2800	OTTA	1 S	2207.8	2208.0	1.2	2.4	1.2		
	2695	PENT	3 S	2337.2	2338.5	3.0	12.0	6.0		
	8800	LEAR	8 S	2337.6	2338.0	1.2	30.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	2337.6	2338.0	1.7	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	2337.6	2338.5	1.2	20.0			QL=6 ST=2 TYP=3
	2695	PENT	21 GRF	2348.0		80.0	4.6			
	2695	LEAR	4 S/F	2350.1	2351.8	8.0	17.0			QL=6 ST=2 TYP=3
	2695	PENT	4 S/F	2351.0	2351.8	4.0	12.6	6.3		
12	8800	LEAR	8 S	0036.1	0037.3	1.4	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	20 GRF	0145.0	0155.1	20.5	25.0			QL=6 ST=2 TYP=2
	2695	LEAR	49 GB	0251.8	0253.8	13.5	770.0			QL=6 ST=2 TYP=7
	8800	LEAR	49 GB	0251.8	0255.0	23.7	1199.0			QL=6 ST=2 TYP=7
	8800	PALE	49 GB	0252.8	0253.8	15.5	1100.0			QL=6 ST=2 TYP=7
	8800	LEAR	4 S/F	0455.3	0456.6	4.7	32.0			QL=6 ST=2 TYP=3
	2695	LEAR	47 GB	0455.6	0456.5	2.5	65.0			QL=6 ST=2 TYP=5
	8400	BERN	4 S/F	0455.7	0456.6	3.0	75.0			
	2695	ATHN	47 GB	0455.8	0456.8	2.5	57.0			QL=6 ST=2 TYP=5
	8800	ATHN	4 S/F	0456.0	0456.6	4.1	22.0			QL=6 ST=2 TYP=3
	8800	ATHN	20 GRF	0631.0	0636.8	19.5	30.0			QL=6 ST=2 TYP=2
	2695	ATHN	20 GRF	0631.8	0637.6	17.8	5.0			QL=6 ST=2 TYP=2
	2800	OTTA	20 GRF	1105.0	1110.0	35.0	5.8	2.7		
	2800	OTTA	23 GRF	1150.0	1405.0	230.0	15.6	6.0		
	2800	OTTA	8 S	1231.6	1231.8	.4	4.6	2.3		
	2800	OTTA	45 C	1237.0	1242.0	7.0	8.0	4.0		
	8800	SGMR	8 S	1238.3	1238.8	.8	23.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1238.5	1240.3	2.0	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	20 GRF	1329.6	1340.6	57.4	65.0			QL=6 ST=2 TYP=2
	2695	ATHN	20 GRF	1332.3	1340.6	54.7	11.0			QL=6 ST=2 TYP=2
	8400	BERN	20 GRF	1332.3	1343.0U	80.0	35.0			ONLY PAPER RE
	8800	SGMR	20 GRF	1338.3	1342.0	17.5	40.0			QL=6 ST=2 TYP=2
	2695	SGMR	4 S/F	1349.5	1351.5	2.1	16.0			QL=6 ST=2 TYP=3
	2695	PENT	1 S	1416.0	1416.5	1.5	2.4	1.2		
	2800	OTTA	1 S	1418.5	1418.6	2.5	5.0	2.7		
	2800	OTTA	21 GRF	1605.0	1625.0	85.0	3.4	1.9		
	8800	ATHN	8 S	1619.6	1620.1	1.5	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	2 S/F	1619.9	1620.0	1.0	3.2	1.6		
	2800	OTTA	3 S	1637.0	1638.0	7.0	27.0	5.4		
	8800	ATHN	4 S/F	1637.3	1638.1	3.5	22.0			QL=6 ST=2 TYP=3
	2695	ATHN	4 S/F	1637.5	1638.1	4.3	21.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1637.8	1638.0	1.3	30.0			QL=6 ST=2 TYP=3
	8800	SGMR	8 S	1720.5	1721.1	1.5	34.0			QL=6 ST=2 TYP=3
	8800	PALE	8 S	1721.0	1721.1	.3	26.0			QL=6 ST=2 TYP=3
	2800	OTTA	32 ABS	1800.0	1820.0	50.0	-3.2	-2.2		
	2800	OTTA	20 GRF	2032.0	2035.0	25.0	3.2	1.6		
	2800	OTTA	260 FAL	2100.0	2130.0	30.0	-6.2	-3.1		
	2800	OTTA	22 GRF	2135.0	2225.0	85.0	6.2	2.0		
13	2695	PENT	8 S	0036.2	0036.5	.8	1.8	0.9		
	2695	ATHN	4 S/F	0633.8	0635.8	3.2	17.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0633.8	0635.8	3.2	27.0			QL=6 ST=2 TYP=3
	8800	LEAR	4 S/F	0634.1	0636.0	6.0	35.0			QL=6 ST=2 TYP=3
	2695	LEAR	8 S	0635.3	0636.0	.8	13.0			QL=6 ST=2 TYP=3
	8800	ATHN	4 S/F	0814.1	0816.3	4.2	15.0			QL=6 ST=2 TYP=3
	8400	BERN	45 C	1021.7	1023.1	5.5	57.0			
	8800	SGMR	47 GB	1021.8	1023.1	2.2	53.0			QL=6 ST=2 TYP=5
	2695	SGMR	8 S	1022.1	1022.5	1.2	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	21 GRF	1105.0	1110.0	17.0	2.2	1.1		
	2800	OTTA	8 S	1110.7	1110.8	.7	2.2	1.1		
	2800	OTTA	1 S	1134.0	1135.0	2.5	2.6	1.3		
	2800	OTTA	27A RF	1210.0		350.0	3.2	3.0		
	2800	OTTA	24 R	1210.0	1225.0	15.0	3.2	1.6		
	2800	OTTA	24P R	1225.0		305.0	3.2			
	2800	OTTA	20 GRF	1230.0	1232.0	25.0	3.2	1.7		
	2800	OTTA	20 GRF	1415.0	1440.0	60.0	5.0	2.5		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
13	8800	ATHN	20	GRF	1417.6	1427.6	20.4	30.0			QL=6 ST=2 TYP=2
	2695	ATHN	20	GRF	1421.8	1427.6	16.2	13.0			QL=6 ST=2 TYP=2
	2800	OTTA	26	FAL	1730.0	1800.0	30.0	-3.2	-1.6		
	2800	OTTA	240	R	1905.0	1920.0	15.0	2.2	1.1		
	2800	OTTA	21	GRF	1925.0	1950.0	195.0	5.8	2.5		
	2800	OTTA	1	S	1946.0	1946.5	2.0	2.2	1.1		
	2695	PENT	20	GRF	2350.0	0010.0	55.0	3.0	1.5		
14	8800	LEAR	20	GRF	0404.0	0416.0	26.0	15.0			QL=6 ST=3 TYP=2
	8800	LEAR	20	GRF	0411.1	0411.3	.4	16.0			QL=6 ST=2 TYP=2
	2695	ATHN	20	GRF	0412.6	0418.3	17.4	8.0			QL=6 ST=2 TYP=2
	8800	ATHN	20	GRF	0412.6	0418.5	17.4	25.0			QL=6 ST=2 TYP=2
	8800	ATHN	4	S/F	0440.1	0440.6	3.2	29.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0656.3	0701.5	6.7	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	20	GRF	0700.5	0728.1	71.5	11.0			QL=5 ST=2 TYP=2
	8400	BERN	3	S	0730.3	0731.5	15.0	105.0			
	8800	ATHN	47	GB	0730.6	0731.5	3.5	72.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0731.0	0731.5	1.8	100.0			QL=6 ST=2 TYP=5
	8800	LEAR	8	S	0835.6	0836.8	1.9	24.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0848.8	0849.8	1.7	17.0			QL=6 ST=2 TYP=3
	8400	BERN	4	S/F	0955.8	0956.1	6.0	91.0			
	2800	OTTA	1	S	1143.0	1143.3	1.0	3.2	1.8		
	2800	OTTA	32	ABS	1155.0	1230.0	70.0	-2.6	-1.3		
	2800	OTTA	21	GRF	1525.0	1615.0	155.0	6.2	3.1		
	2695	SGMR	8	S	1559.8	1601.3	1.7	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	2	S/F	1605.0	1609.0	6.0	4.0	2.2		
	2695	ATHN	4	S/F	1605.1	1608.8	6.9	7.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1605.5	1607.7	15.0	34.0			ONLY PAPER RE
	8800	ATHN	4	S/F	1606.3	1607.6	5.8	22.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1606.6	1607.8	1.7	31.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1915.0	1923.0	45.0	2.6	1.3		
	2800	OTTA	1	S	1943.0	1943.5	1.5	3.8	1.9		
	2800	OTTA	23	GRF	2140.0	2210.0	160.0	4.2	1.9		
	2695	PENT	1	S	2313.2	2314.0	2.0	3.6	1.5		
15	8800	LEAR	8	S	0012.8	0013.3	1.7	13.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0110.3	0110.3	.3	26.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0152.8	0153.0	.5	29.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0152.8	0153.0	.5	35.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0252.1	0252.6	.9	51.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0252.3	0252.6	.5	53.0			QL=6 ST=2 TYP=5
	8800	LEAR	8	S	0638.5	0640.8		21.0			QL=6 ST=3 TYP=3
	8400	BERN	47	GB	0839.0	0919.0U	200.0U	2800.0D			
	8800	LEAR	49	GB	0839.1	0846.0	14.0	990.0			QL=6 ST=2 TYP=7
	2695	LEAR	49	GB	0841.3	0846.0	11.8	470.0			QL=6 ST=2 TYP=7
	2695	LEAR	47	GB	0853.1	0853.3	3.9	139.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0853.1	0853.3	3.7	500.0			QL=6 ST=2 TYP=5
	2695	LEAR	49	GB	0913.6	0914.1	9.7	1800.0			QL=6 ST=2 TYP=7
	8800	LEAR	49	GB	0913.6	0914.3	9.7	1300.0			QL=6 ST=2 TYP=7
	2695	LEAR	49	GB	0923.3	0923.3	8.3	4000.0			QL=6 ST=2 TYP=7
	8800	LEAR	49	GB	0923.3	0923.5	8.3	1300.0			QL=6 ST=2 TYP=7
	8800	LEAR	49	GB	0931.6	0931.8	2.4D	930.0			QL=6 ST=2 TYP=7
	2695	LEAR	49	GB	0931.6	0931.8	2.4D	2000.0			QL=6 ST=2 TYP=7
	2800	OTTA	260	FAL	1055.0	1447.0	232.0D	-41.0			
	2800	OTTA	260	FAL	1635.0	1655.0	20.0	-3.2	-1.6		
16	8800	LEAR	4	S/F	0007.1	0007.1	4.9	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0041.8	0043.1	5.0	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0042.3	0043.1	1.8	71.0			QL=6 ST=2 TYP=5
	8800	PALE	47	GB	0042.6	0043.1	1.4	81.0			QL=6 ST=2 TYP=5
	2695	PENT	1	S	0042.8	0043.5	2.0	7.6	2.6		
	8800	LEAR	8	S	0422.6	0423.0	.5	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	1133.4	1133.7	.5	2.8			
	2800	OTTA	21	GRF	1135.0	1240.0	90.0	3.4	1.9		
	2800	OTTA	1	S	1137.0	1137.4	1.0	2.8	1.0		
	2800	OTTA	45	C	1140.0	1143.5	5.0	5.0	2.3		
	8800	ATHN	8	S	1330.1	1330.5	.9	13.0			QL=5 ST=2 TYP=3
	8800	ATHN	47	GB	1400.3	1402.3	4.5	72.0			QL=6 ST=2 TYP=5
	8400	BERN	3	S	1400.4	1402.4	9.0	78.0			
	8800	SGMR	47	GB	1401.3	1402.3	2.8	64.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	1411.3	1414.6	5.3D	18.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
16	2800	OTTA	1	S	1438.0	1438.1	1.0	4.2	2.1		
	2800	OTTA	21	GRF	1530.0	1735.0	340.0	15.6	7.0		
	2800	OTTA	1	S	1538.0	1539.0	3.0	2.8	1.3		
	2800	OTTA	3	S	1631.2	1633.0	4.0	16.6	5.4		
	2800	OTTA	1	S	1652.0	1653.0	2.0	9.0	3.0		
	2800	OTTA	20	GRF	2140.0	2155.0	30.0	2.0	0.8		
	2695	LEAR	47	GB	2354.1	2354.8	.9	50.0			QL=6 ST=2 TYP=5
17	2800	OTTA	21	GRF	1520.0	1610.0	85.0	3.0	1.7		
	2800	OTTA	1	S	1636.0	1636.3	1.0	3.4	1.1		
	2800	OTTA	20	GRF	1650.0	1730.0	60.0	2.2	1.1		
	2800	OTTA	20	GRF	1755.0	1830.0	90.0	4.4	3.0		
	2800	OTTA	22	GRF	1945.0	2015.0	115.0	4.2	2.6		
	2800	OTTA	240	R	2155.0	2215.0	20.0	2.4	1.2		
	2695	PENT	20	GRF	2230.0	2300.0	55.0	2.4	1.4		
18	2800	OTTA	1	S	1322.7	1322.9	6.0	9.0			
	2800	OTTA	20	GRF	1440.0	1540.0	125.0	2.8	2.0		
	2800	OTTA	21	GRF	1730.0	1850.0	215.0	5.6	2.6		
	2695	SGMR	20	GRF	1758.1	1800.8	4.5	42.0			QL=6 ST=2 TYP=2
	2800	OTTA	1	S	1808.0	1809.5	3.0	3.8	1.2		
	2695	SGMR	47	GB	1809.1	1817.0	23.2	189.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	2311.3	2314.0	4.2	30.0			QL=4 ST=2 TYP=3
	2695	LEAR	47	GB	2313.0	2314.3	2.1	110.0			QL=4 ST=2 TYP=5
19	2800	OTTA	20	GRF	1235.0	1320.0	115.0	2.8	2.0		
	2800	OTTA	240	R	1533.0	1548.0	15.0	5.4	2.5		
	2800	OTTA	240	R	2205.0	2315.0	70.0	7.4	4.0		
	2695	PENT	8	S	2327.0	2327.0	.2	5.0			
20	2695	PENT	21	GRF	0010.0	0140.0	90.0D	16.2			
	8800	LEAR	4	S/F	0020.6E	0044.3	33.4D	38.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0021.0E	0025.1	33.0D	18.0			QL=6 ST=2 TYP=3
	2695	PENT	22	GRF	0023.3	0029.8	15.0	14.4	7.0		
	8800	PALE	8	S	0044.3	0044.3	.3	31.0			QL=6 ST=2 TYP=3
┌	8800	LEAR	20	GRF	0644.0	0647.0	5.3	8.0			QL=6 ST=2 TYP=2
└	8800	ATHN	4	S/F	0646.1	0647.1	2.4	10.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	0648.5	0648.6	.1	78.0			QL=6 ST=2 TYP=5
┌	2695	LEAR	20	GRF	0756.3	0805.6	12.7	11.0			QL=6 ST=2 TYP=2
└	8800	LEAR	20	GRF	0756.3	0805.6	15.7	10.0			QL=6 ST=2 TYP=2
	2695	PENT	240	R	1540.0	1550.0	10.0	3.0	1.5		
	2800	OTTA	20	GRF	1600.0	1610.0	80.0	3.0	1.5		
	2800	OTTA	240	R	1748.0	1750.0	2.0	2.4	1.2		
	2800	OTTA	20	GRF	1850.0	1853.0	20.0	2.0	1.0		
	2800	OTTA	21	GRF	2030.0		300.0D	14.8			
	2800	OTTA	20	GRF	2047.0	2058.0	135.0	12.4	6.2		
	2695	PENT	20	GRF	2315.0	2330.0	35.0	4.6	3.0		
21	2695	ATHN	4	S/F	0349.3	0353.6	8.7	8.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0349.3	0353.6	8.7	13.0			QL=6 ST=2 TYP=3
┌	2695	ATHN	20	GRF	0424.8	0431.3	19.0	11.0			QL=6 ST=2 TYP=2
└	8800	ATHN	20	GRF	0424.8	0431.3	15.7	13.0			QL=6 ST=2 TYP=2
	2800	OTTA	20	GRF	1100.0	1115.0	40.0	3.2	1.6		
	2800	OTTA	20	GRF	1233.0	1235.0	15.0	2.0	1.0		
	2800	OTTA	21	GRF	1337.0	1345.0	35.0	3.2	1.6		
┌	2800	OTTA	2	S/F	1340.0	1342.0	9.0	6.6	3.2		
└	2695	ATHN	20	GRF	1340.6	1342.1	6.0	11.0			QL=6 ST=2 TYP=2
	2800	OTTA	22	GRF	1720.0	1728.0	30.0	3.2	1.5		
	2800	OTTA	22	GRF	1910.0	1915.0	20.0	2.0	1.0		
	2800	OTTA	22	GRF	1945.0	1958.0	25.0	3.8	1.4		
	2800	OTTA	1	S	2031.0	2032.0	5.0	2.6	1.4		
	2800	OTTA	21	GRF	2125.0	2200.0	140.0	4.8	2.2		
	2800	OTTA	20	GRF	2127.0	2129.5	13.0	6.0	2.0		
22	2695	LEAR	4	S/F	0335.8	0337.6	4.2	30.0			QL=5 ST=2 TYP=3
	8800	LEAR	4	S/F	0337.0	0337.5	3.5	23.0			QL=5 ST=2 TYP=3
┌	8800	LEAR	8	S	0912.1	0912.5	1.0	20.0			QL=6 ST=2 TYP=3
└	2695	LEAR	8	S	0912.1	0912.6	.9	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1115.0	1235.0	120.0	5.8	3.2		
┌	8800	ATHN	4	S/F	1222.3	1223.8	5.0	21.0			QL=6 ST=2 TYP=3
└	2695	ATHN	4	S/F	1222.3	1224.6	7.7	2.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
22	2800	OTTA	1	S	1355.7	1356.0	1.5	6.4	3.1		
	2800	OTTA	22	GRF	1445.0	1500.0	30.0	3.2	2.1		
	2800	OTTA	20	GRF	1540.0	1542.0	25.0	2.2	1.1		
	2800	OTTA	260	FAL	1620.0	1700.0	40.0	-3.2	-1.6		
	2800	OTTA	20	GRF	1850.0	2110.0	245.0	4.2	2.1		
	8800	LEAR	8	S	2319.3	2319.8	.8	21.0			QL=5 ST=2 TYP=3
23	2695	ATHN	20	GRF	0837.1	0840.6	7.9	8.0			QL=6 ST=3 TYP=2
	2695	LEAR	4	S/F	0839.8	0840.6	5.0	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	27A	RF	1230.0		85.0	3.0	2.4		
	2800	OTTA	24	R	1230.0	1255.0	25.0	3.0	1.5		
	2800	OTTA	24P	R	1255.0		50.0	3.0			
	2800	OTTA	1	S	1322.0	1323.0	3.0	2.8	1.3		
	2800	OTTA	26	FAL	1345.0	1355.0	10.0	-3.0	-1.5		
	2800	OTTA	21	GRF	1710.0	1845.0	220.0	4.0	2.2		
	2800	OTTA	3	S	1816.0	1816.9	4.0	12.0	4.0		
	2695	SGMR	8	S	1816.6	1816.8	.7	18.0			QL=6 ST=2 TYP=3
24	2695	PENT	20	GRF	0005.0	0020.0	40.0	2.4	1.8		
	2695	PENT	20	GRF	1517.0	1520.0	20.0	2.2	1.0		
	2695	ATHN	4	S/F	1601.3	1602.3	2.7	11.0			QL=6 ST=2 TYP=3
	2800	PENT	2	S/F	1601.6	1602.0	3.0	8.8	4.4		
	8800	SGMR	4	S/F	1601.6	1602.8	2.9	15.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1602.6	1603.3	3.0	17.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1907.0	1920.0	45.0	2.4	1.2		
	2800	OTTA	1	S	2047.0	2047.2	3.0	2.2	1.0		
25	2695	PENT	20	GRF	0040.0	0045.0	35.0	2.0	1.0		
	8400	BERN	4	S/F	0949.0	0952.6	7.0	118.0			
	2800	OTTA	20	GRF	1120.0	1205.0	115.0	3.8	1.6		
	2800	OTTA	21	GRF	1450.0	1455.0	85.0	3.2	1.6		
	2800	OTTA	1	S	1453.0	1454.0	2.0	2.2	1.4		
	2800	OTTA	20	GRF	1815.0	1822.0	35.0	2.0	1.0		
	2800	OTTA	22	GRF	1903.0	1912.0	37.0	3.0	1.2		
	2695	PENT	3	S	2324.0	2325.8	6.0	22.0	8.4		
	8800	PALE	47	GB	2324.8	2325.5	2.3	81.0			QL=6 ST=2 TYP=5
	2695	PENT	20	GRF	2347.0	2349.0	105.0	3.2	1.6		
26	2800	OTTA	20	GRF	1240.0	1310.0	55.0	2.0	1.0		
	2800	OTTA	20	GRF	2010.0	2025.0	50.0	2.6	1.8		
27	2800	OTTA	240	R	1650.0	1657.0	7.0	1.4	.7		
	2800	OTTA	240	R	1745.0	1755.0	10.0	2.0	1.0		
	2695	PENT	240	R	2150.0	2245.9	55.0	2.4	.8		
	2695	SGMR	4	S/F	2302.8	2305.6	3.2	21.0			QL=6 ST=2 TYP=3
	2695	PENT	20	GRF	2350.0		115.00	7.4			
28	2695	LEAR	47	GB	0553.3	0554.1	1.5	65.0			QL=6 ST=2 TYP=5
30	2695	PENT	20	GRF	0002.0	0009.0	30.0	17.2	7.4		
	2695	LEAR	47	GB	0310.1	0310.1	.2	65.0			QL=6 ST=2 TYP=5
	2695	ATHN	8	S	0444.1	0444.3	.5	13.0			QL=5 ST=3 TYP=3
	2695	LEAR	8	S	0513.3	0513.5	1.0	35.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0547.1	0547.3	.5	32.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1105.0	1135.0	90.0	2.6	1.3		
	2800	OTTA	21	GRF	1340.0	1450.0	100.0	4.0	2.0		
	2800	OTTA	1	S	1340.2	1341.0	1.5	2.4	1.2		
	2800	OTTA	21	GRF	1528.0	1700.0	180.0	6.2	3.1		
	2800	OTTA	1	S	1628.3	1628.6	1.0	2.6	1.3		
	2800	OTTA	21	GRF	2255.0	0035.0	170.00	13.6			
31	8400	BERN	3	S	0942.6	0943.8	17.0	70.0			
	8800	ATHN	4	S/F	0943.3	0943.6	2.2	38.0			QL=6 ST=3 TYP=3
	2800	OTTA	21	GRF	1240.0	1255.0	50.0	4.0	2.0		
	8800	ATHN	4	S/F	1243.5	1247.3	7.0	15.0			QL=6 ST=2 TYP=3
	8400	BERN	20	GRF	1245.7	1256.6	23.0	28.0			
	2695	ATHN	4	S/F	1246.3	1247.3	6.2	10.0			QL=6 ST=2 TYP=3
	2800	OTTA	2	S/F	1246.5	1247.2	5.0	8.0	4.0		
	8800	ATHN	8	S	1254.1	1254.6	.9	11.0			QL=6 ST=2 TYP=3
	8400	BERN	3	S	1348.1	1349.3	22.0	42.0			
	8800	ATHN	4	S/F	1348.1	1349.5	2.4	23.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

MAY 1983

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
31	2695	ATHN	4	S/F	1348.1	1349.6	6.9	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1348.5	1350.0	3.5	20.0	8.0		
	8800	SGMR	8	S	1349.1	1349.5	1.0	20.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1349.1	1349.5	1.0	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	29	PBI	1352.0	1352.0	38.0	7.2	3.6		
	2800	OTTA	23	GRF	1450.0	1840.0	405.0	8.4	3.8		
	2800	OTTA	20	GRF	1457.0	1500.0	45.0	5.2	2.4		
	8400	BERN	21	GRF	1457.5	1459.2	33.0	55.0			
	8800	SGMR	4	S/F	1457.8	1459.1	2.3	48.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	1458.6	1459.1	2.5	34.0			QL=6 ST=3 TYP=3
	2695	ATHN	4	S/F	1458.6	1459.6	2.5	7.0			QL=6 ST=3 TYP=3
	2800	OTTA	22	GRF	1810.0	1814.9	16.0	12.0	4.0		
	2695	SGMR	20	GRF	1810.6	1814.8	8.5	13.0			QL=6 ST=2 TYP=2
	8800	SGMR	20	GRF	1813.3	1814.6	1.8	22.0			QL=6 ST=2 TYP=2
	2800	OTTA	20	GRF	2015.0	2018.0	15.0	4.5	1.4		
	2695	PENT	20	GRF	2340.0	2350.0	40.0	2.6	1.4		

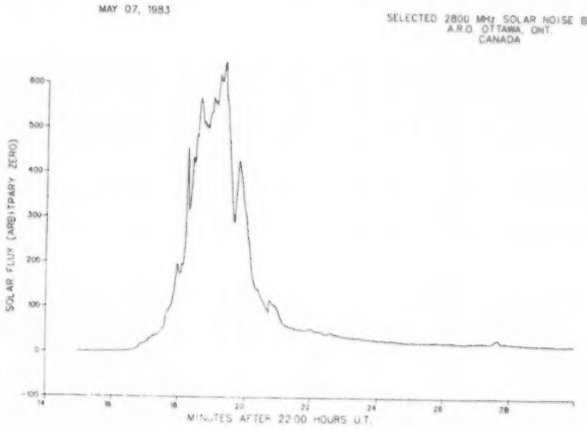
Observatories:
BERN = Berne MANI = Manila OTTA = Ottawa ARO PENT = Penticton SGMR = Sagamore Hill
LEAR = Learmonth ATHN = Athens PALE = Palehua

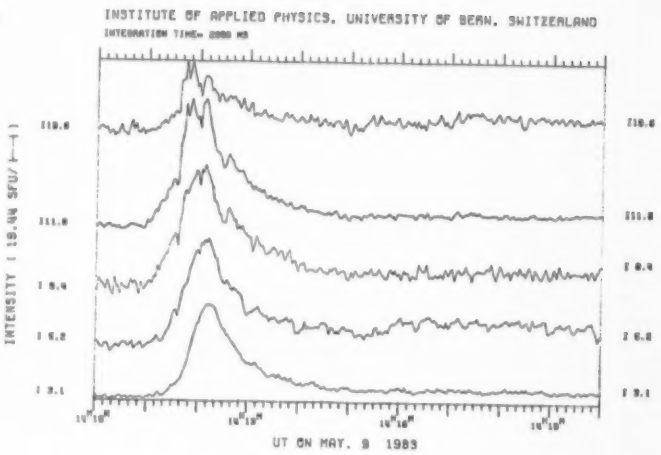
Explanation of Type Code:

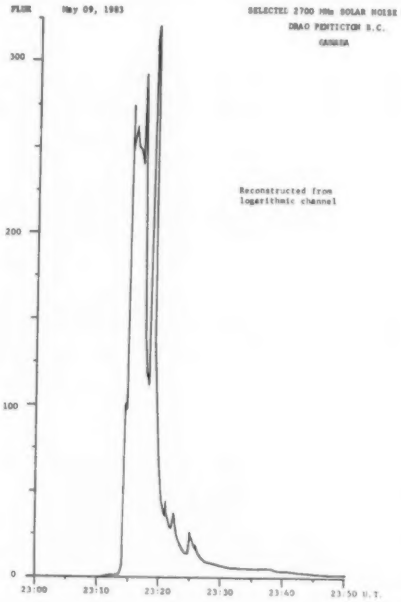
1 Simple 1	7 Minor +	24 Rise	30 Post Burst Increase A	43 Onset on Noise Storm
2 Simple 1F	8 Spike	25 Rise A	31 Post Burst Decrease	44 Noise Storm in Progress
3 Simple 2	20 Simple 3	26 Fall	32 Absorption	45 Complex
4 Simple 2F	21 Simple 3A	27 Rise and Fall	40 Fluctuation	46 Complex F
5 Simple	22 Simple 3F	28 Precursor	41 Group of Bursts	47 Great Burstise Storm
6 Minor	23 Simple 3AF	29 Post Burst Increase	42 Series of Bursts	48 Major
				49 Major +

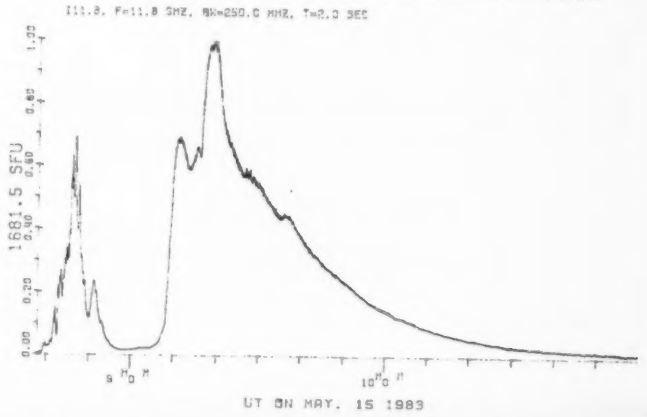
Remarks:
QL = Quality (1=poor to 6=excellent)
ST = Status (1=real time; 2=final; 3=correction; 4=deletion)
TYP= Type (1=noise storm;2=rise in base level;3=minor;4=group;5=major;6=major plus;7=Castelli U-type burst)

SELECTED SOLAR NOISE BURSTS




INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERN, SWITZERLAND
INTEGRATION TIME= 2000 MS
INTENSITY (19.44 SFU/ I—1)
UT ON MAY. 9 1983




INSTITUTE OF APPLIED PHYSICS, UNIVERSITY OF BERNE, SWITZERLAND
III.8, F=11.8 GHZ, BW=250.0 MHZ, TW=2.0 SEC
1681.5 SFU
UT ON MAY. 15 1983

BOULDER GEOMAGNETIC SUBSTORM LOG

May 1983

DATE	ONSET TIME	DIR	COMMENTS
05/01			Field unsettled all day.
	0700	East	Weak substorm.
	0905	West	Weak substorm.
	1020	West	Initial onset at College, several injections with recovery near 1300 UT.
05/02			Field intermittently unsettled.
	1425	West	Slow onset.
	1540	West	Injection into existing substorm.
05/03			Field slightly unsettled.
05/04			Field intermittently active.
	0400	East	
	0725		Localized substorm, vicinity Lynn Lake.
	1230	West	Moderate to strong substorm. Initial on set at College, several injections with recovery near 1600 UT.
05/05			Field unsettled all day.
	1010	West	
	1250	West	
	1455	West	Initial onset at College.
	1940		Polar cap substorm, Cape Parry to Sachs Harbor.
05/06			Field intermittently unsettled.
	0410	East	Several injections with recovery near 1700 UT.
	0810	West	Several injections with recovery near 1000 UT.
	1240	West	
05/07			Field intermittently unsettled.
	1140	West	
05/08			Field intermittently unsettled.
	0020	East	Boulder in partial ring current sector.
	1035	West	
05/09			Field slightly unsettled.
05/10			Field intermittently unsettled.
	0925	West	Weak substorm.
	1150	West	Weak substorm.
	1540		Localized substorm Norman Wells to Arctic Village.
	1855		Slow positive impulse H-component all mid/low latitude stations.
05/11	0700		Gradual onset to magstorm conditions.
05/12			Intermittent magstorm conditions.
05/13			Magstorm conditions 0600-1700 UT. Unsettled balance of day.
05/14			Field intermittently active.
	0120	East	
	0200	East	
	0535	Center	Several injections with recovery near 0700 UT.
	0855	West	Several injections with recovery near 1030 UT.
	1400	West	Weak substorm.
05/15			Field unsettled all day.
	0335	East	Weak substorm.
	0445	East	Weak substorm.
	1120	West	Initial onset at College.
05/16			Field intermittently unsettled.
	0545	East	Weak substorm.
	0635	East	Weak substorm.
	1020	West	Weak substorm.
05/17			Storm level 1300-1900 UT unsettled prior to storm and active after storm.
05/18			Field intermittently unsettled.
	0620	East	Weak substorm.
	0735	East	Weak substorm.
05/19			Field intermittently unsettled.
	0510	East	
	0820	Center	Initial onset at Lynn Lake.
05/20			Field quiet until 1900 UT and then unsettled balance of day.
05/21	0415		Positive impulse H-component all mid/low latitude stations.
	1410		Several injections with recovery near 1630 UT.
05/22	0500		Gradual onset to minor storm level.
05/23			Minor storm conditions continue through 1900 UT.
05/24			Field active all day.
	1235		Positive impulse H-component all mid/low latitude stations.
	1605	West	Strong substorm, several injections with recovery near 1900 UT.
	1930		Moderate substorm, polar cap and mid-latitude stations.
05/25	0110		Polar cap and mid-latitude substorm.
	0810	West	Weak substorm. Field quiet after 0900 UT.
05/26			Field unsettled after 1600 UT.
	1650		Polar cap substorm.
	1810		Polar cap substorm.
05/27			Field unsettled all day.
	0150	East	Localized substorm vicinity NAQ.*
	0605	East	Localized substorm vicinity Lynn Lake.
	0930	West	Weak substorm.
05/28			Field slightly unsettled.
05/29			Field slightly unsettled.
05/30			Field intermittently unsettled with no distinctive substorm activity.
05/31			Field unsettled all day.
	0610	West	
	1010	West	Weak substorm.

* Note: Narsarssuaq became operational on 19 April 1983. For convenience, it will be identified by the call letters NAQ.

INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2026	OCT 19	AT	TA	TA					TA	TA		TA					TA						TA	TA				
2027	NOV 15				AT	AT					AT						TA		TA	TA	AT						AT	
2028	DEC 12	TA				AT	AT			AT	TA							AT		AT	TA				TA			
2029	1982 JAN 8						TA	TA							TA		TA					AT			AT			
2030	FEB 4				TA	TA	TA	TA			TA						TA							TA			TA	
2031	MAR 3						TA	TA		TA	TA		TA			TA				TA	TA						AT	
2032	MAR 30		TA		TA							TA						AT	TA		TA			TA				
2033	APR 26		AT						TA	TA														AT		AT		
2034	MAY 23				AT		TA						AT														TA	
2035	JUN 19													TA										TA				
2036	JUL 16						TA					AT				AT												
2037	AUG 12									TA			TA	TA	TA				TA		TA							
2038	SEP 8	TA	AT												TA		AT						TA					
2039	OCT 5		AT		AT						AT	TA					AT								TA			
2040	NOV 1	AT				AT					AT					AT			TA					TA	AT			
2041	NOV 28	TA					AT							TA	TA								AT	AT				
2042	DEC 25			AT	AT				TA										TA	TA				AT				
2043	1983 JAN 21										TA					TA	AT											
2044	FEB 17											TA			TA		TA	TA		AT	TA	TA		TA				
2045	MAR 16			AT	AT	AT						AT					AT		TA									
2046	APR 12			TA										TA				AT	TA	AT					AT	AT	AT	
2047	MAY 9			AT			AT				AT	AT							AT									

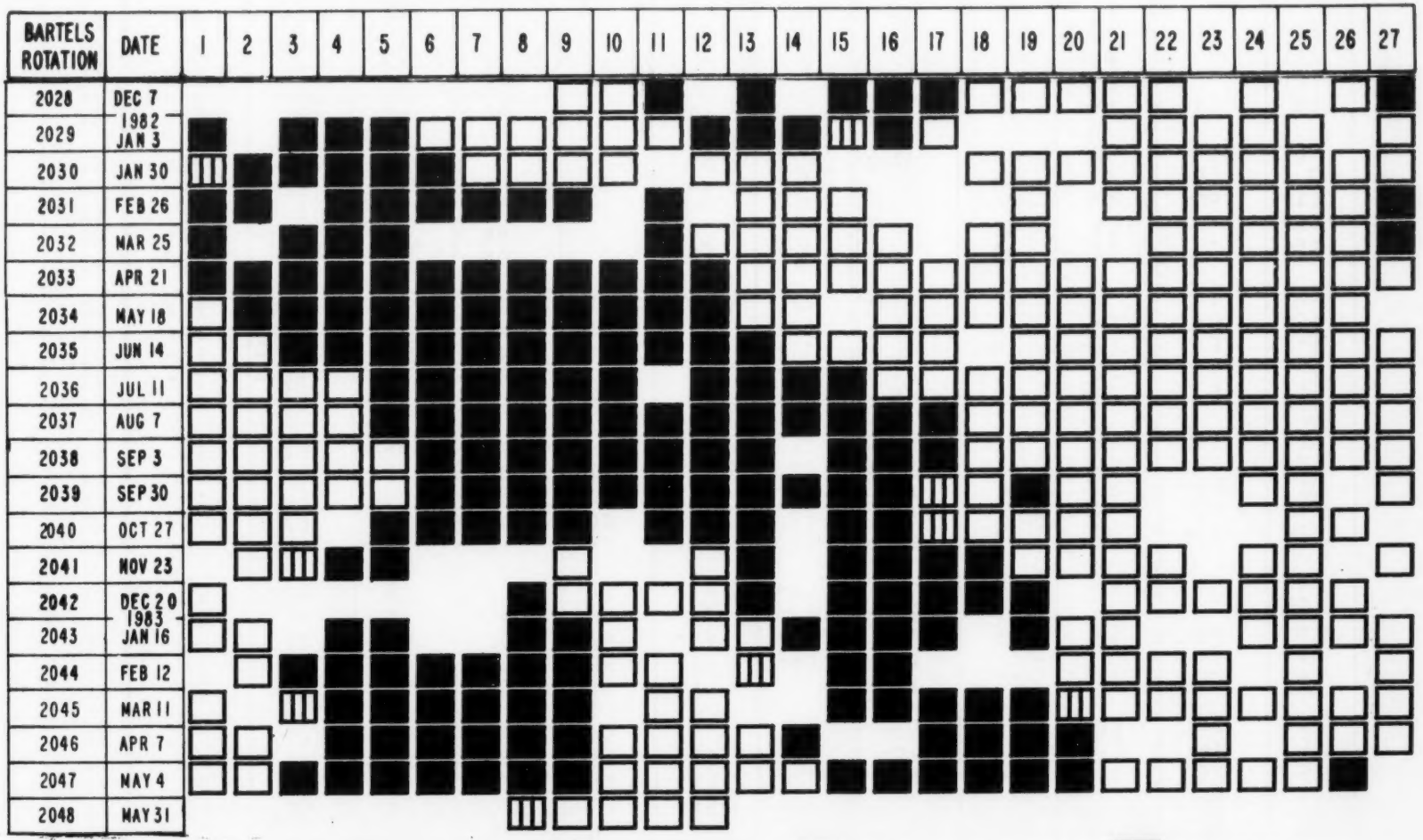
[ ] = definitely towards the sun [ ] = definitely away from the sun

T = towards the sun A = away from the sun * = effect doubtful or not discernible - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operations in August 1981.

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operation in August 1981.

STANFORD MEAN SOLAR MAGNETIC FIELD



POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: ☐ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT

No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

day	1982 June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1983 Jan.	Feb.	March	April	May
01	.	.	49	89	22	-31	42	-9	-31	.	25	69
02	33	85	19	102	53	-15	.	.	.	.	38	65
03	38	75	19	84	37	-18	.	-89	-8	11	52	52
04	54	71	52	66	18	-38	10	-81	15	33	61	35
05	80	53	85	68	-6	.	-42	-73	45	38	63	12
06	82	35	105	55	-41	-63	.	-22	.	51	50	-3
07	77	29	31	30	-54	-61	-90	-2	.	.	29	-15
08	80	42	63	-27	-76	-68	-64	.	54	65	21	-43
09	68	54	59	-55	-90	.	-29	53	84	.	.	-51
10	54	63	33	-74	-93	-54	-20	46	93	48	-15	-45
11	50	87	-30	-93	-96	-21	26	37	69	30	-44	-27
12	58	79	-37	-124	-100	1	29	53	.	.	-48	-3
13	.	43	-118	-125	-70	19	43	84	16	2	-43	10
14	78	9	-121	-120	-35	34	28	84	-19	-25	-29	27
15	51	-39	-144	-112	-7	37	.	.	-22	-44	-11	31
16	-13	-112	-149	.	-1	52	8	39	-104	-62	9	10
17	-51	-164	-141	-49	4	.	57	10	-102	-27	16	5
18	-93	-193	-124	-28	-43	.	.	.	-57	-19	13	-9
19	-184	-201	-93	-14	55	.	64	-37	-37	-5	15	-69
20	-237	-189	-59	12	33	22	32	-119	-7	.	-11	-87
21	-225	.	-32	40	.	33	.	.	24	19	.	-96
22	-170	-128	-16	44	.	.	.	.	27	15	.	-47
23	-123	-71	-12	26	17	.	.	-25	.	.	-66	-11
24	-69	-29	5	10	45	12	.	-3	-1	.	-59	6
25	-56	-5	32	8	.	-1	.	31	.	-23	-34	36
26	-40	12	39	18	54	-31	.	.	-49	-34	-15	64
27	11	28	47	36	55	-53	-31	31	-66	-42	.	101
28	37	38	46	72	34	.	6	3	.	-17	.	117
29	46	48	25	57	20	.	42	-14		-20	36	-12
30	59	61	39	52	.	.	59	-51		1	.	.
31		53	64		-11		35	-91		18		.

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

SGD 466 Part I (Prompt)

APRIL 1983 DATA

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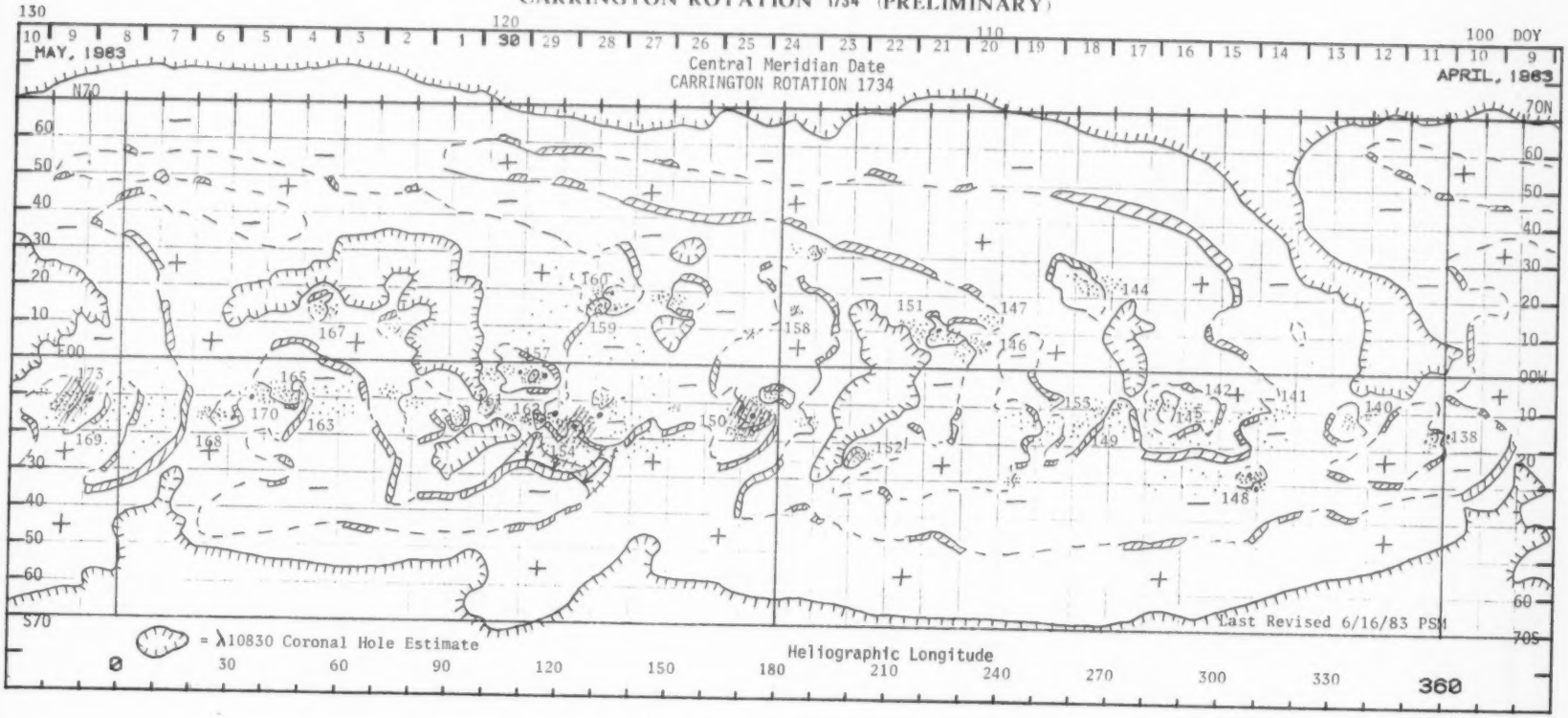
Radio Propagation Indices	
Quality Indices on Paths to Germany	119
Transmission Frequency Ranges - North Atlantic Path	120-121

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

Hα SYNOPTIC CHART

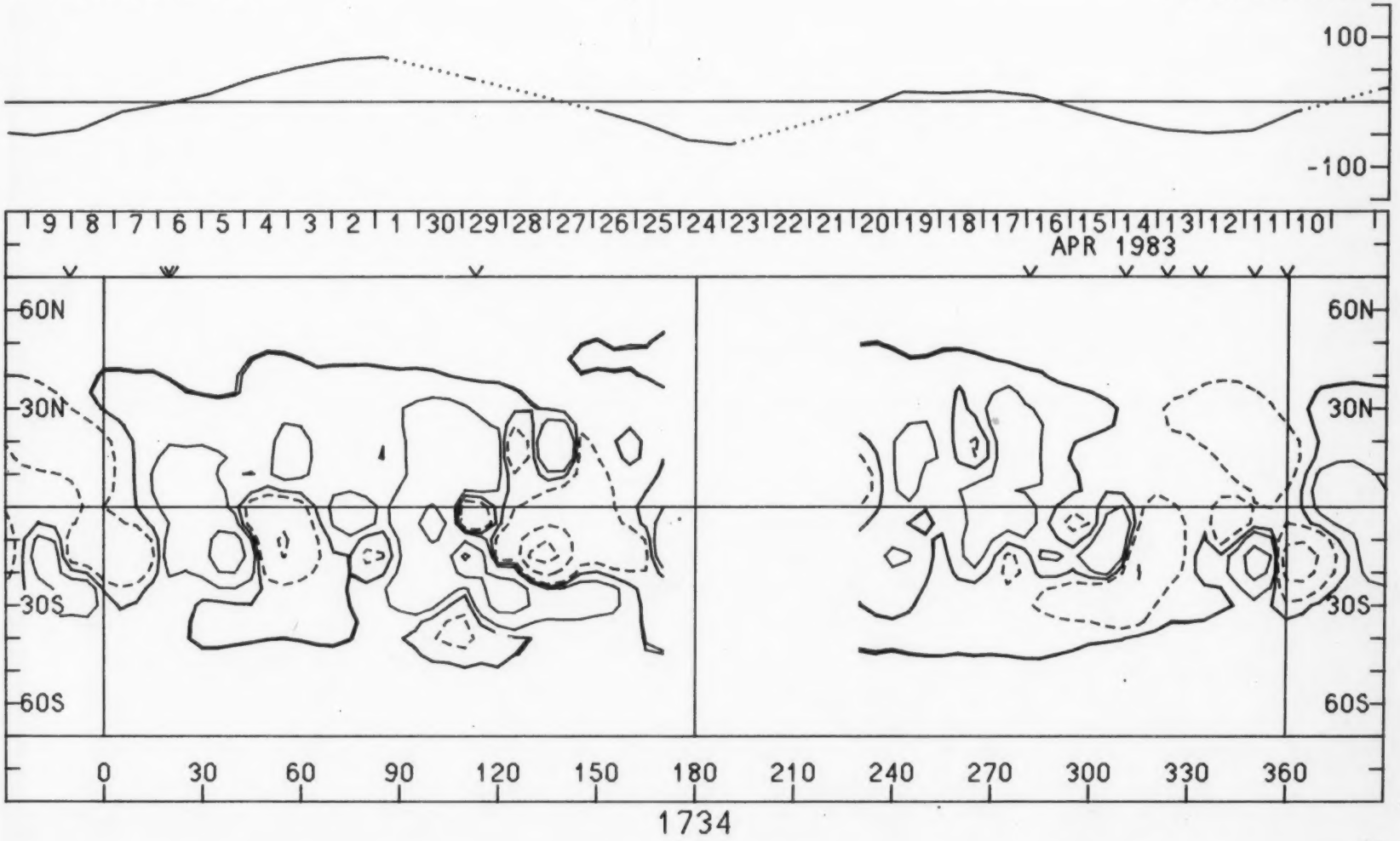
CARRINGTON ROTATION 1734 (PRELIMINARY)



SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION 1734

Stanford Solar Observatory

0,±100,200,500... μT

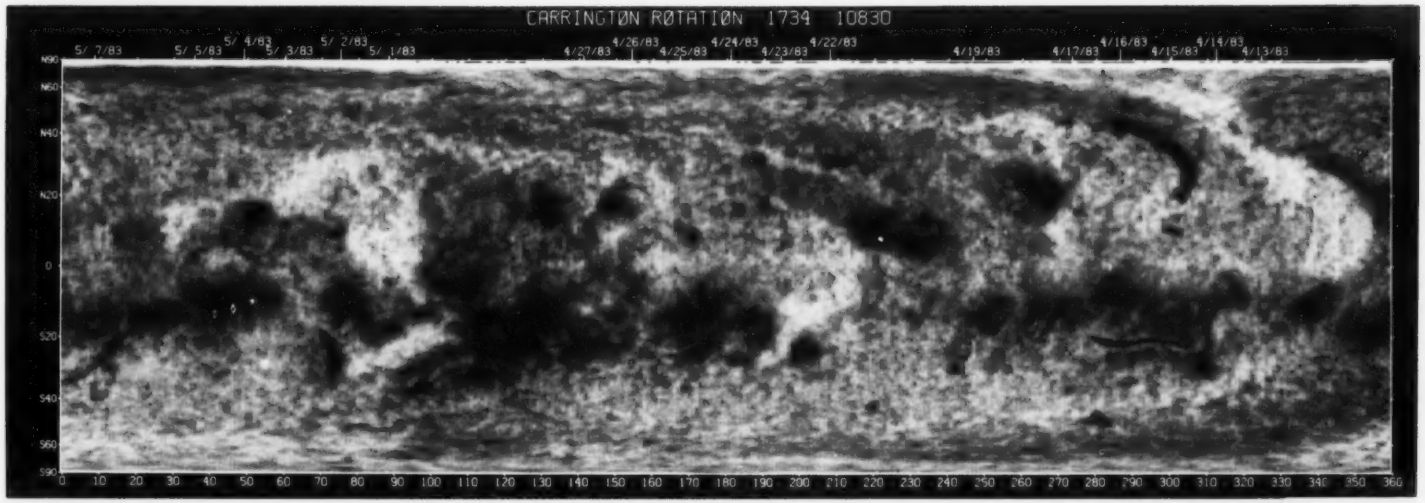


KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

HELIUM 10830Å SYNOPTIC MAPS

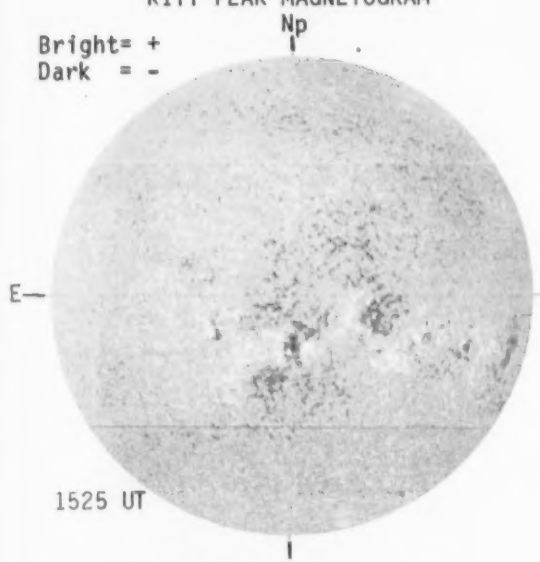
CARRINGTON ROTATION 1732

KITT PEAK NATIONAL OBSERVATORY

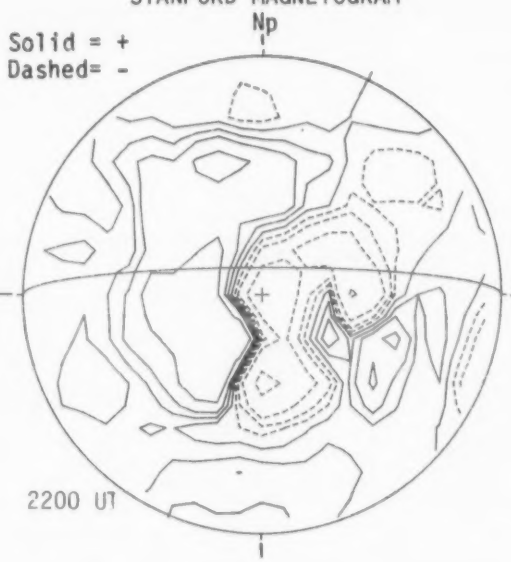


A P R I L 01, 1 9 8 3 (P=-26.17, B_o=-6.56, L_o= 133.78)

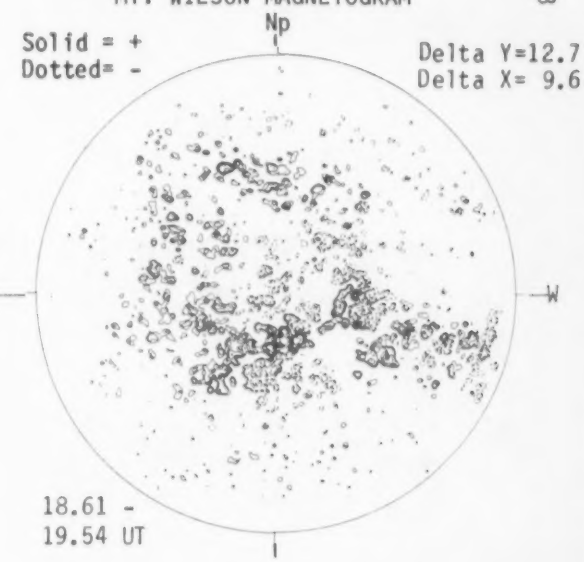
KITT PEAK MAGNETOGRAM



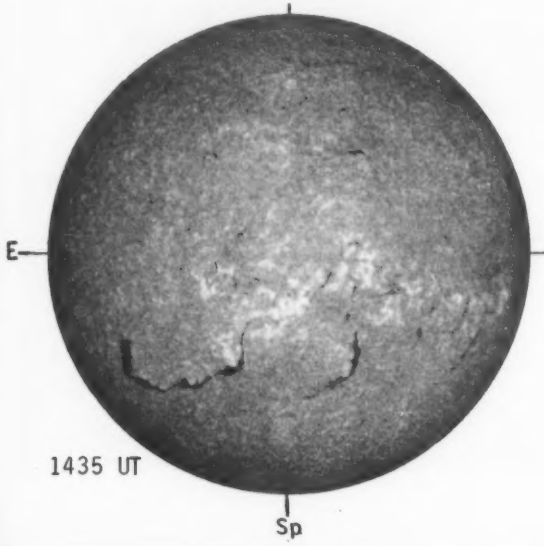
STANFORD MAGNETOGRAM



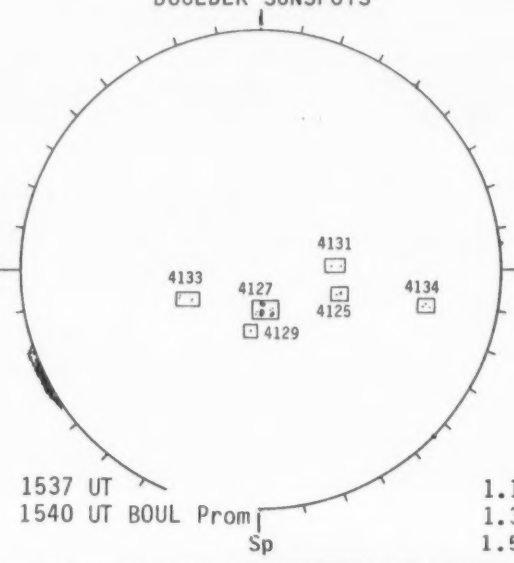
MT. WILSON MAGNETOGRAM



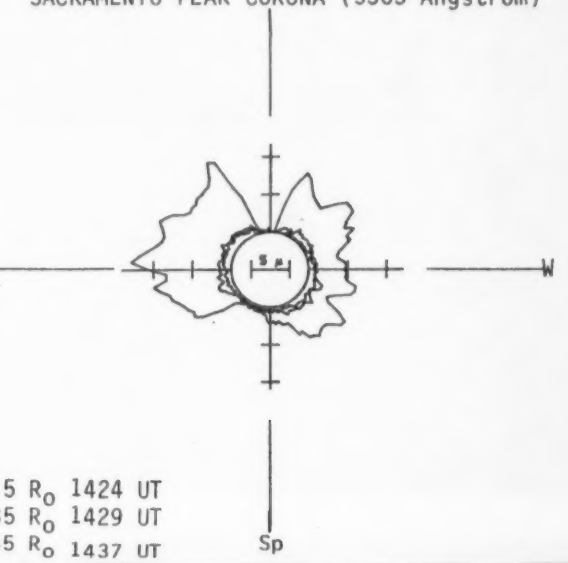
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

1540 UT BOUL Prom

Sp

Sp

1.35 R_o 1429 UT

1.55 R_o 1437 UT

Sp

KITT PEAK MAGNETOGRAM

Np

Bright= +

Dark = -

E

1407 UT

Sp

STANFORD MAGNETOGRAM

Np

Solid = +

Dashed= -

2139 UT

Sp

MT. WILSON MAGNETOGRAM

Np

Solid = +

Dotted= -

Delta Y=12.7

Delta X= 9.6

W

19.46 -

20.39 UT

Sp

SACRAMENTO PEAK H-ALPHA

E

1439 UT

Sp

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

E

5 R

W

1.15 R_o 1759 UT

1.35 R_o 1745 UT

1.55 R_o 1751 UT

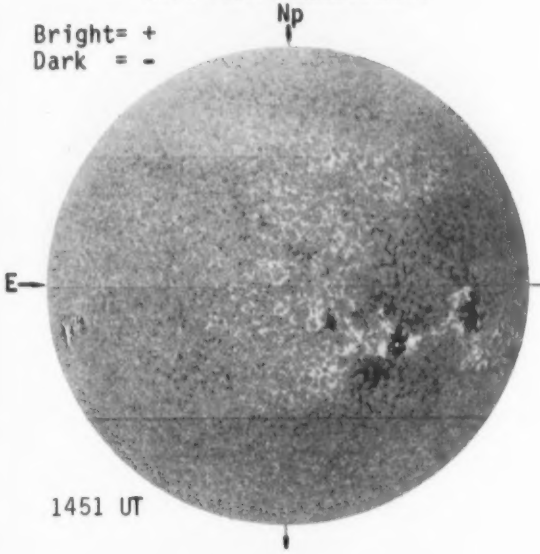
Sp

55

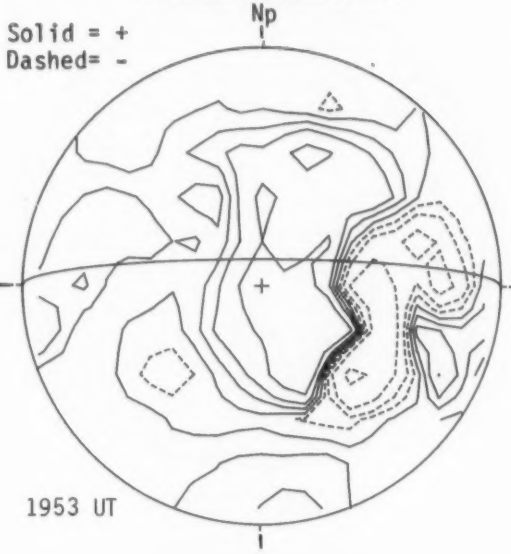
Apr 83

A P R I L 03, 1 9 8 3 (P=-26.25, B_o=-6.45, L_o= 107.40)

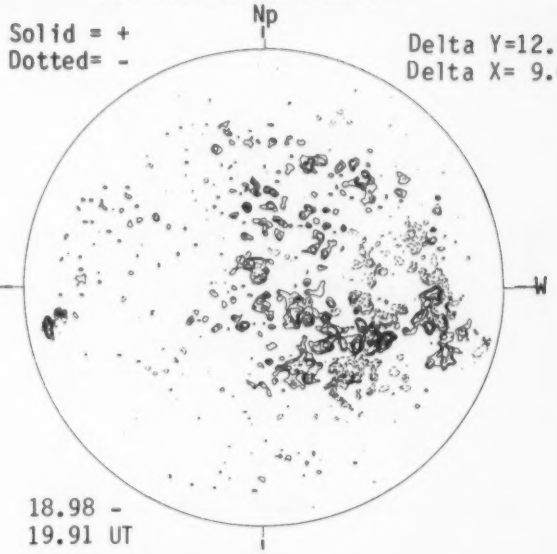
KITT PEAK MAGNETOGRAM



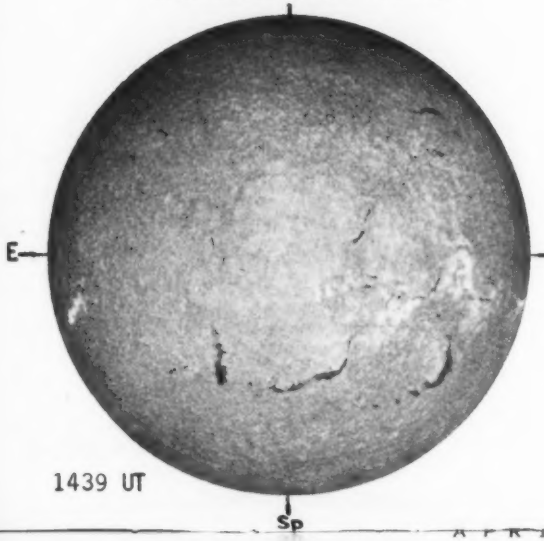
STANFORD MAGNETOGRAM



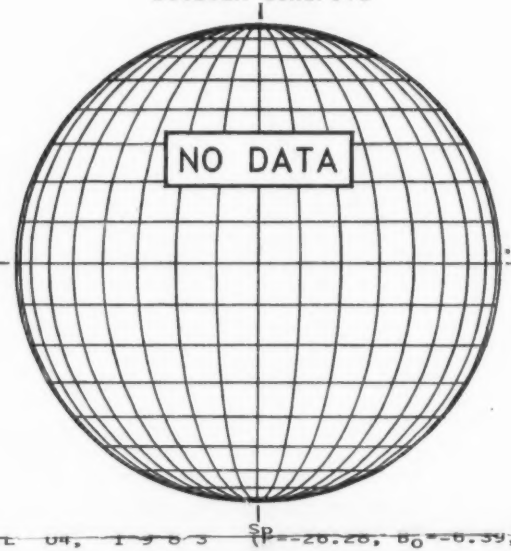
MT. WILSON MAGNETOGRAM



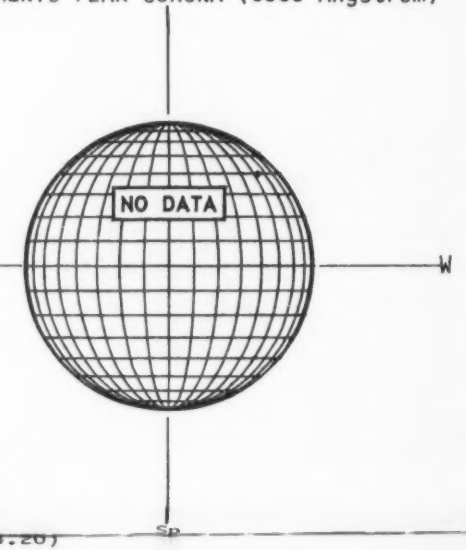
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 04, 1 9 8 3 (P=-26.28, B_o=-6.39, L_o= 94.26)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

1439 UT

Sp

Sp

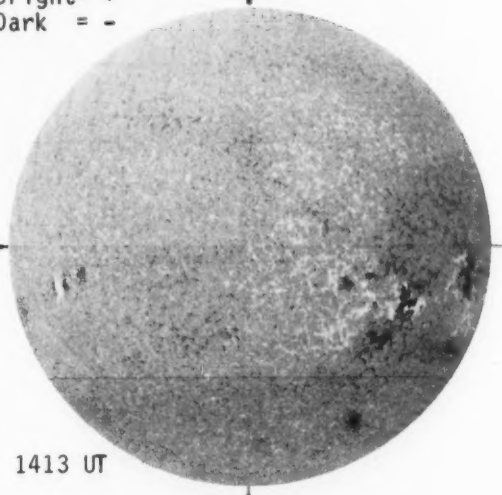
Sp

APRIL 04, 1983 (P_0=-26.28, B_0=-6.39, L_0= 94.26)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np



E

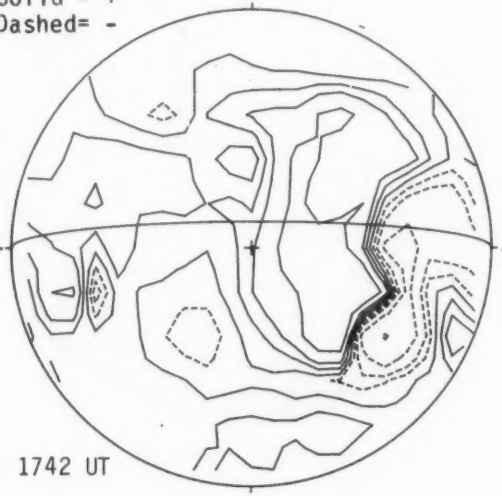
1413 UT

Sp

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np



1742 UT

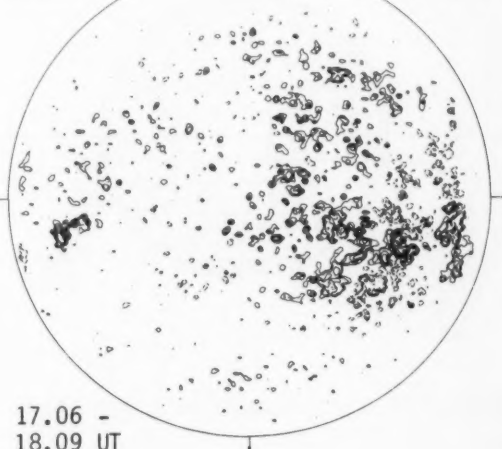
Sp

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Np

Delta Y=12.7
Delta X= 9.6

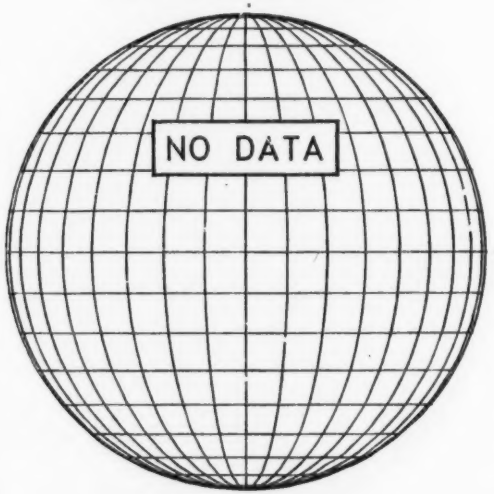


W

17.06 -
18.09 UT

Sp

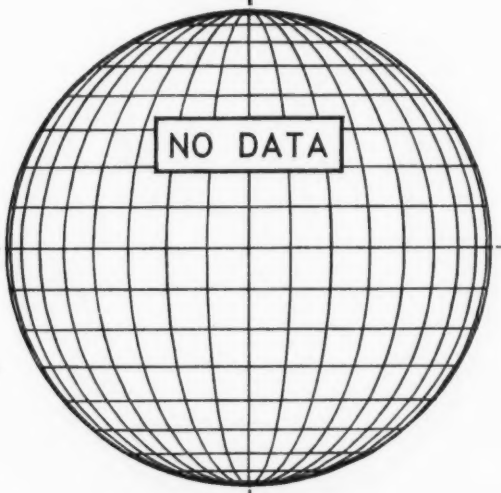
SACRAMENTO PEAK H-ALPHA



E

Sp

BOULDER SUNSPOTS



Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

W

Sp

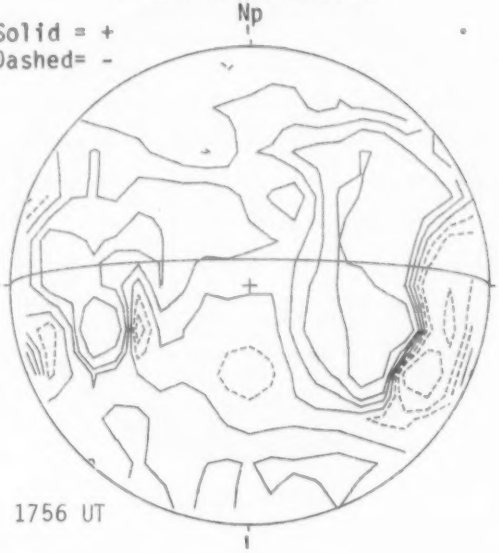
A P R I L 05, 1 9 8 3 (P=-26.30, B_o=-6.33, L_o= 81.01)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

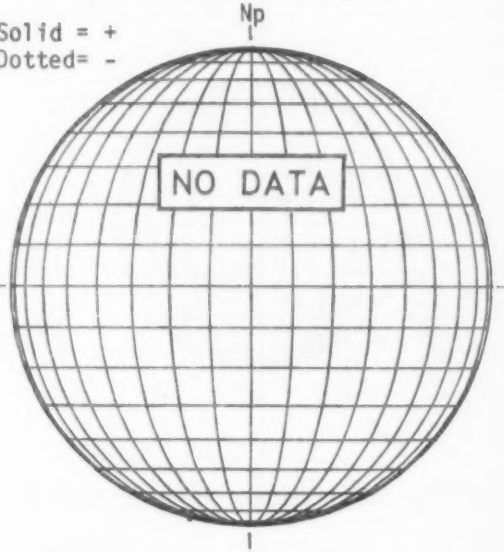
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

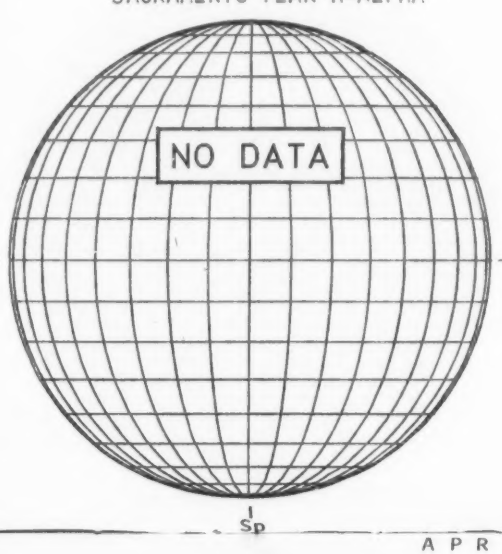


MT. WILSON MAGNETOGRAM

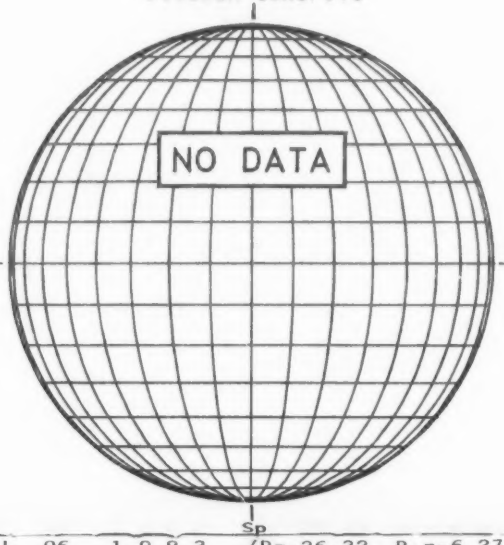
Solid = +
Dotted= -



SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

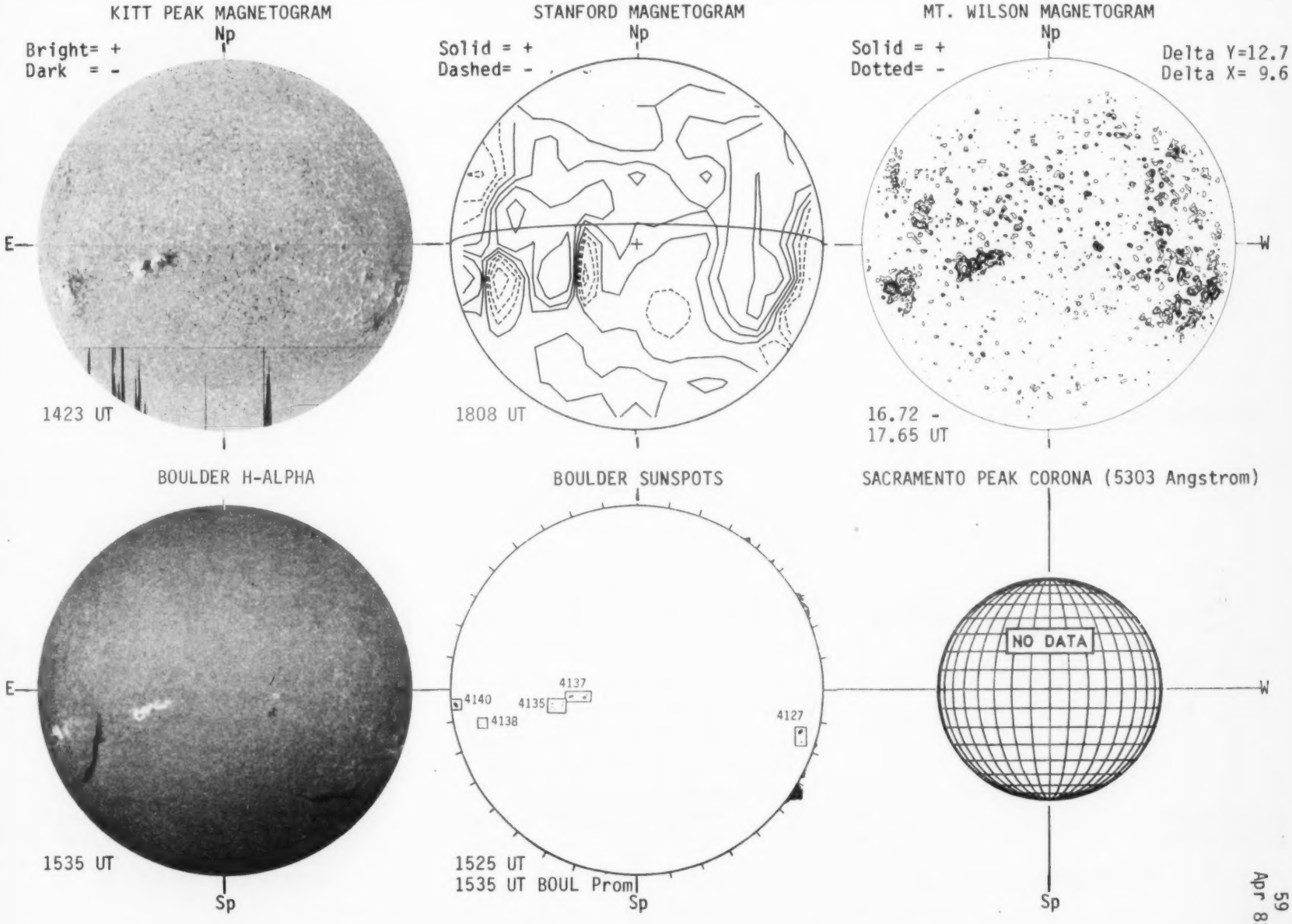
A P R I L 06, 1 9 8 3 (P=-26.32, B_o=-6.27, L_o= 67.81)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

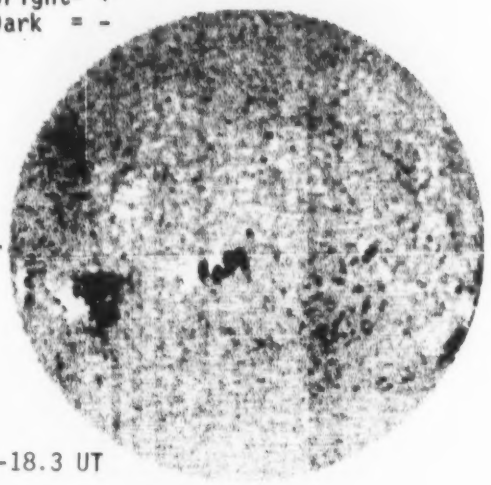
A P R I L 06, 1 9 8 3 (P=-26.32, B_o=-6.27, L_o= 67.81)



A P R I L 07, 1 9 8 3 (P=-26.32, B_o=-6.20, L_o= 54.62)

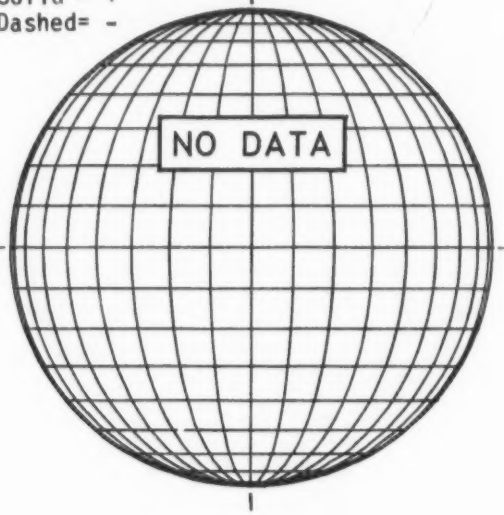
MT. WILSON MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

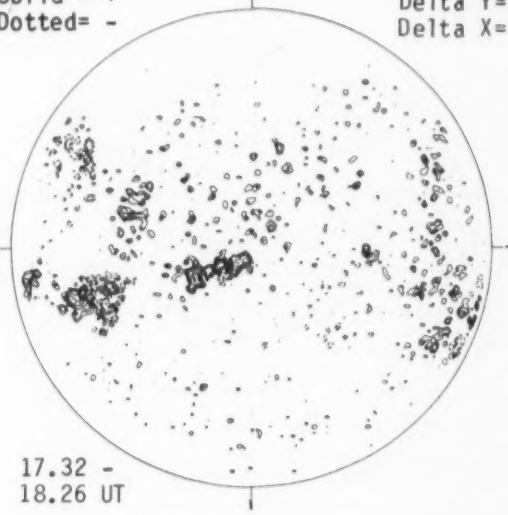
Solid = +
Dashed= -



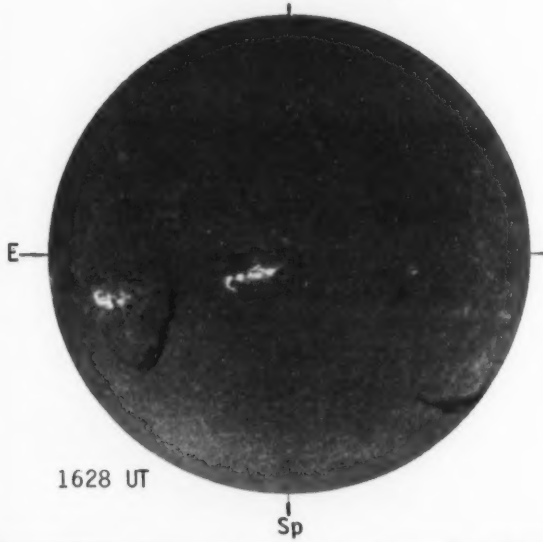
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

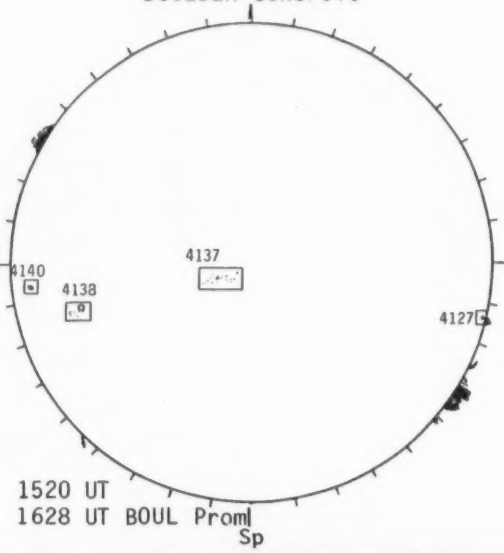
Delta Y=12.7
Delta X= 9.6



BOULDER H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

A P R I L 08, 1 9 8 3 (P=-26.32, B_o=-6.14, L_o= 41.42)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

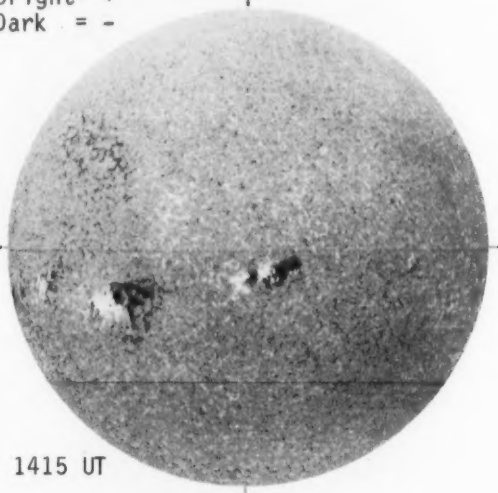
1628 UT BOUL Prom

Sp Sp Sp

A P R I L 08, 1 9 8 3 (P=-26.32, B_O=-6.14, L_O= 41.42)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



Np

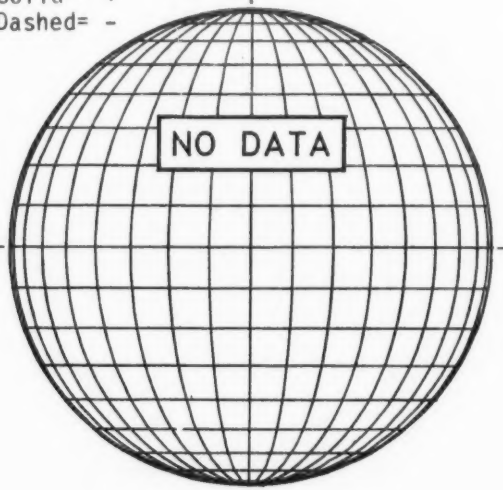
E

1415 UT

Sp

STANFORD MAGNETOGRAM

Solid = +
Dashed= -



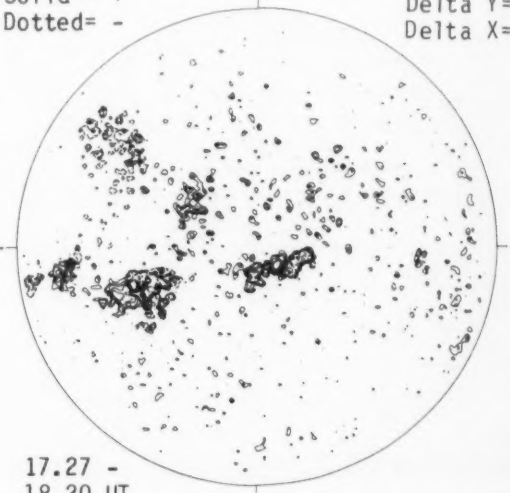
Np

Sp

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



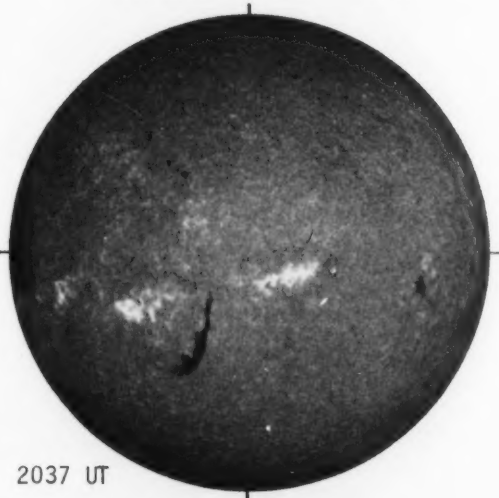
Np

W

17.27 -
18.20 UT

Sp

SACRAMENTO PEAK H-ALPHA

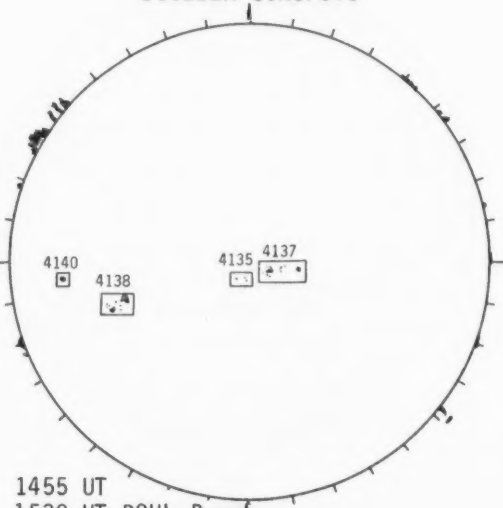


E

2037 UT

Sp

BOULDER SUNSPOTS



1455 UT
1530 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

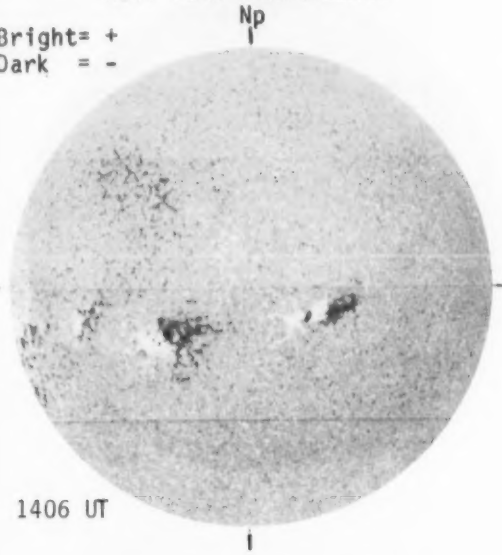
W

Sp

A P R I L 09, 1 9 8 3 (P=-26.31, B_o=-6.07, L_o= 28.22)

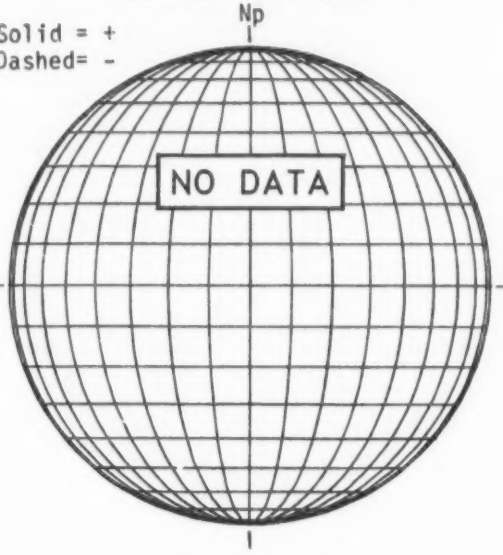
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

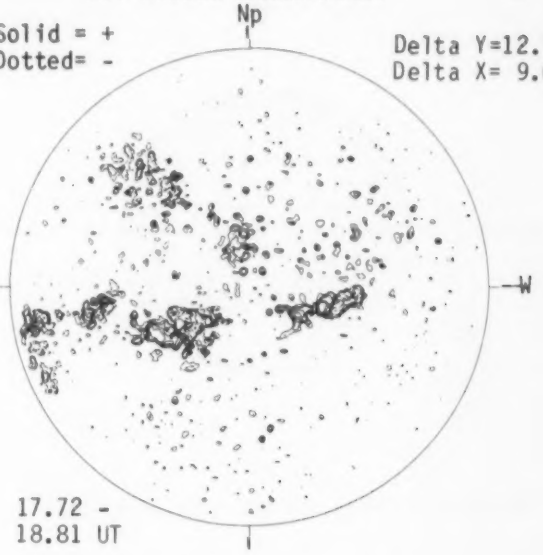
Solid = +
Dashed= -



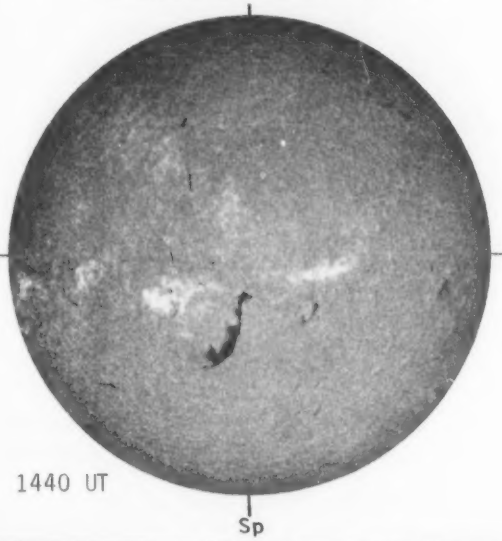
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

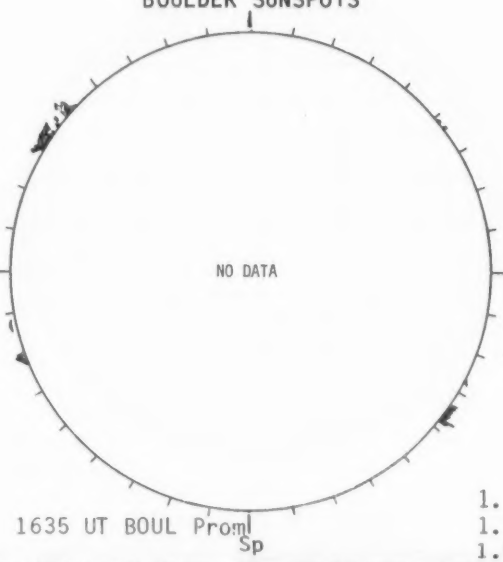
Delta Y=12.7
Delta X= 9.6



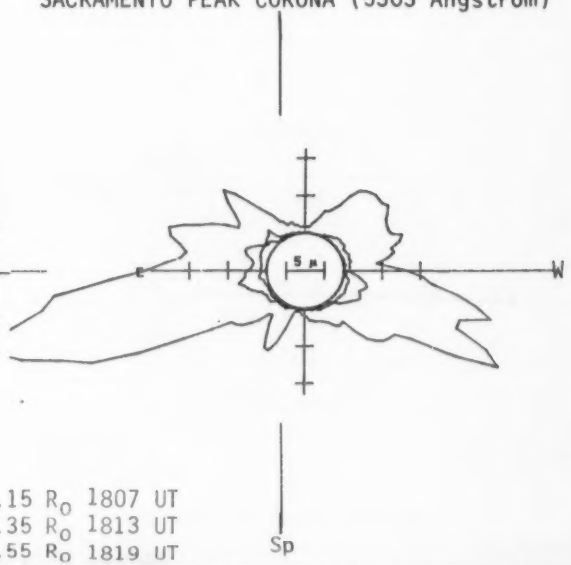
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

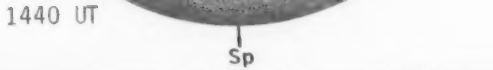


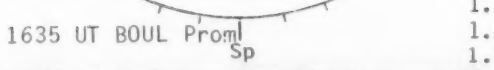
A P R I L 10, 1 9 8 3 (P=-26.30, B_o=-6.00, L_o= 15.02)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

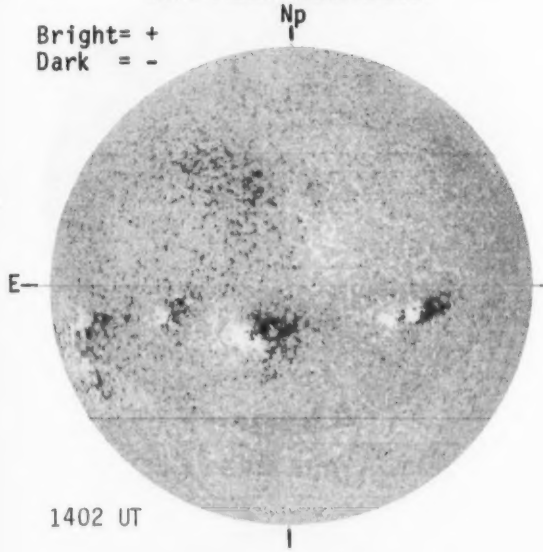




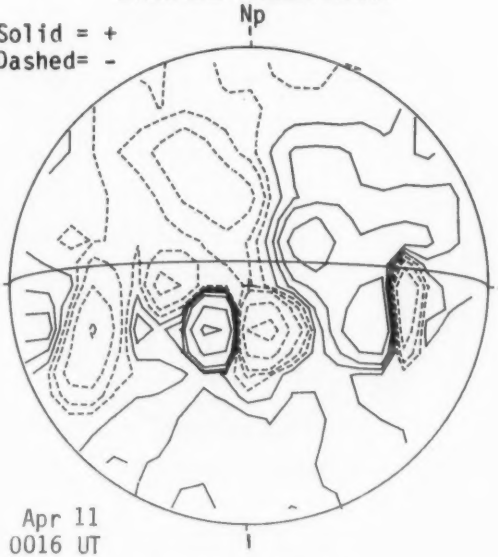
1.15 R_O 1807 UT
1.35 R_O 1813 UT
1.55 R_O 1819 UT

A P R I L 10, 1 9 8 3 (P=-26.30, B_O=-6.00, L_O= 15.02)

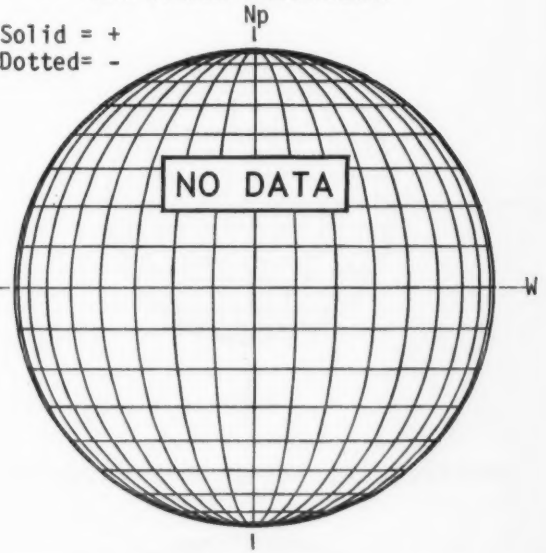
KITT PEAK MAGNETOGRAM



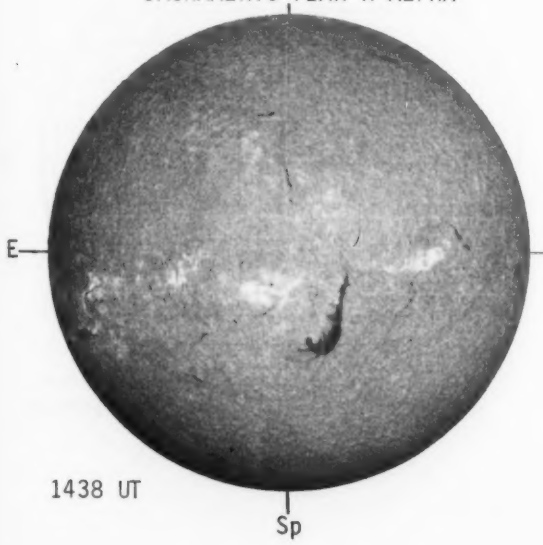
STANFORD MAGNETOGRAM



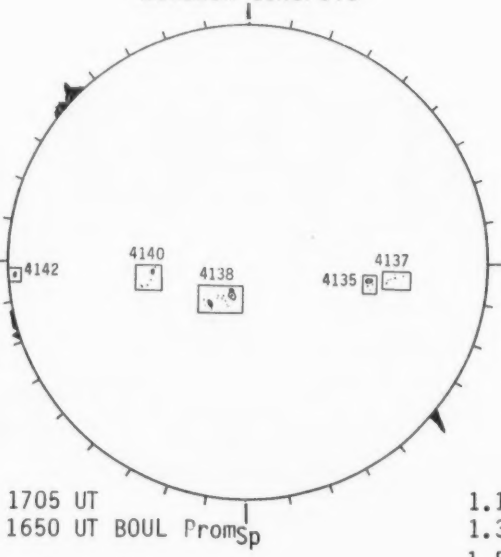
MT. WILSON MAGNETOGRAM



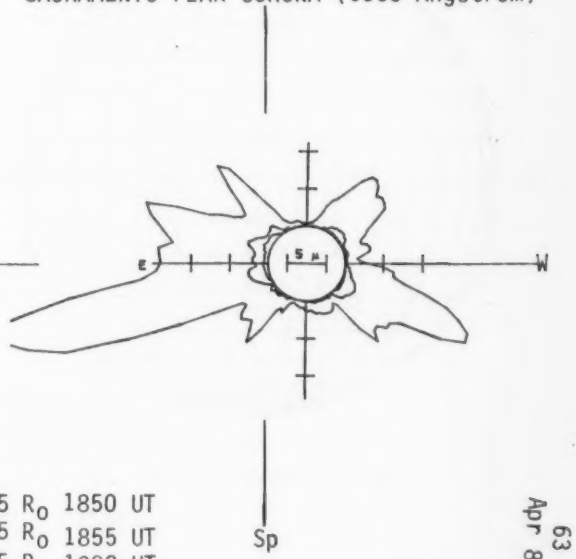
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_O 1850 UT
1.35 R_O 1855 UT
1.55 R_O 1902 UT

A P R I L 11, 1 9 8 3 (P=-26.27, B_o=-5.93, L_o= 1.82)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -

NO DATA

E

STANFORD MAGNETOGRAM

Np

Solid = +
Dashed= -

1803 UT

MT. WILSON MAGNETOGRAM

Np

Solid = +
Dotted= -

NO DATA

W

SACRAMENTO PEAK H-ALPHA

E

1431 UT

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

W

Sp

A P R I L 12, 1 9 8 3 (P=-26.24, B_o=-5.86, L_o= 348.62)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

1431 UT

Np

Sp

Sp

A P R I L 12, 1 9 8 3 (P=-26.24, B_O=-5.86, L_O= 348.62)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

NO DATA

E

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

Apr 13
0018 UT

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Np

NO DATA

W

SACRAMENTO PEAK H-ALPHA

E

1520 UT

Sp

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

W

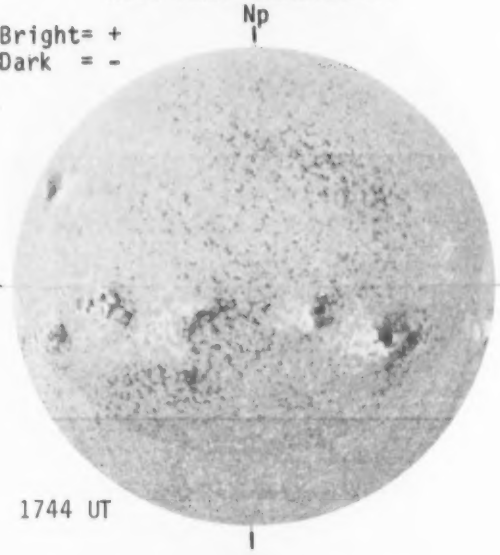
Sp

65
Apr 83

A P R I L 13, 1 9 8 3 (P=-26.21, B_0=-5.79, L_0= 335.42)

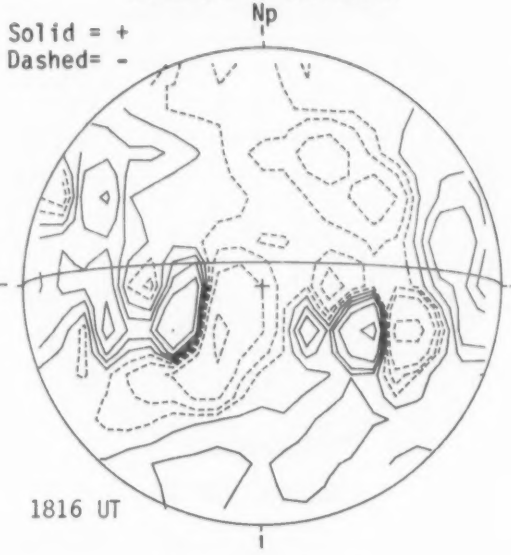
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



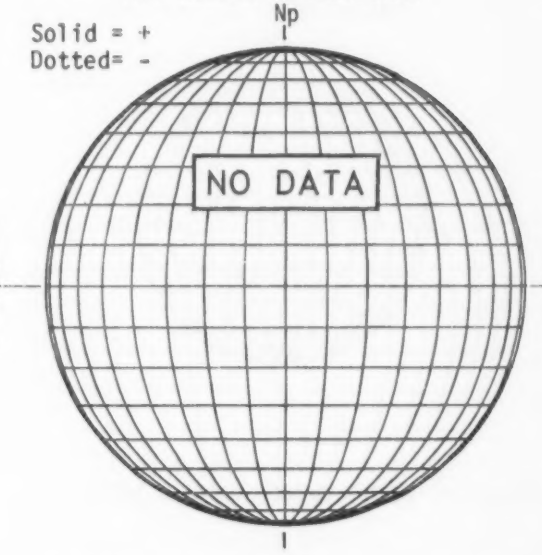
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

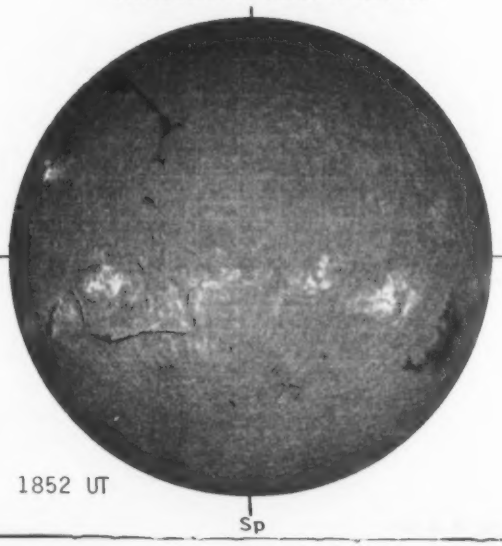


MT. WILSON MAGNETOGRAM

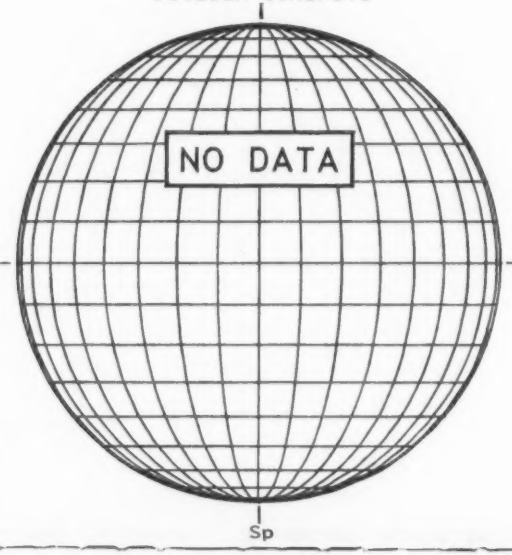
Solid = +
Dotted= -



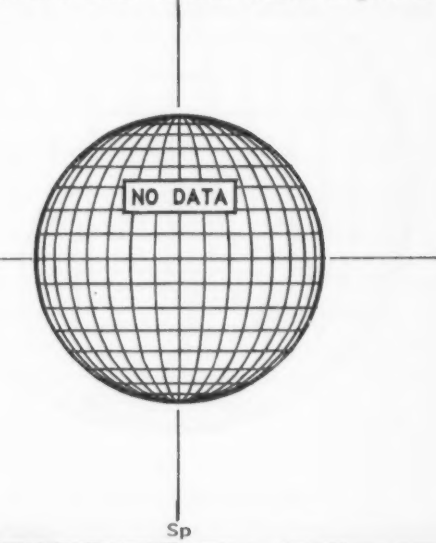
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 14, 1 9 8 3 (P=-26.16, B_0=-5.71, L_0= 322.22)

1852 UT

Sp

Sp

Sp

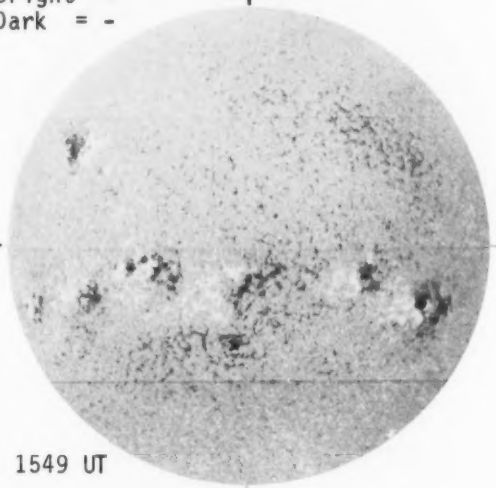
A P R I L 14, 1 9 8 3 (P=-26.16, B_o=-5.71, L_o= 322.22)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

E

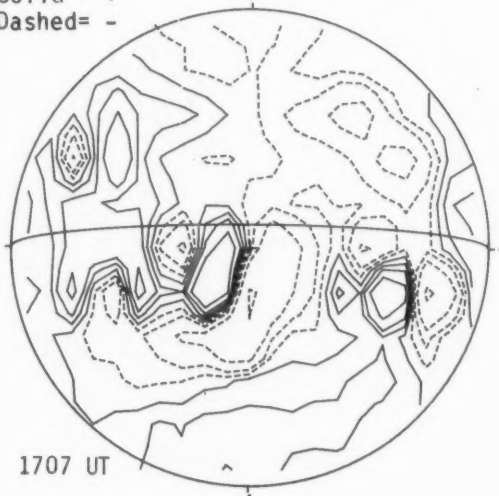


1549 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np



1707 UT

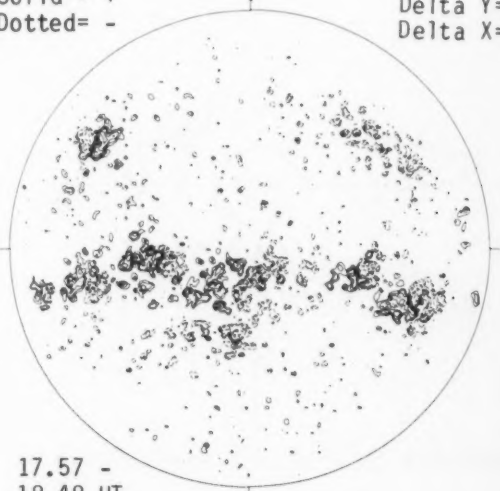
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.7

Np

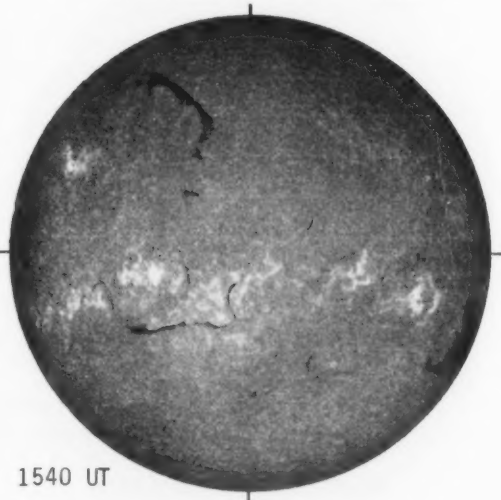
W



17.57 -
18.48 UT

SACRAMENTO PEAK H-ALPHA

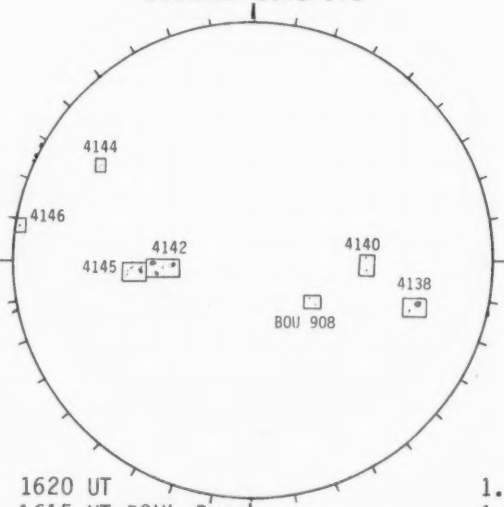
E



1540 UT

Sp

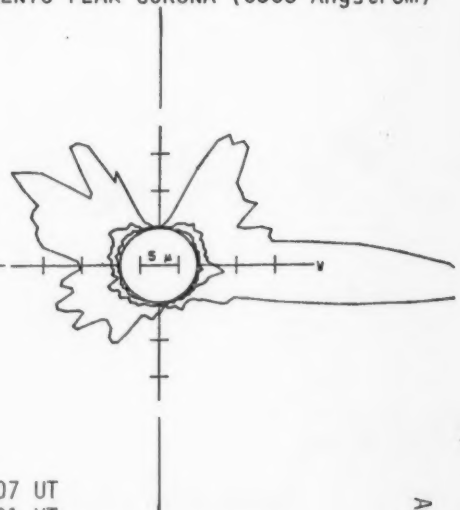
BOULDER SUNSPOTS



1620 UT
1615 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 2107 UT
1.35 R_o 2101 UT
1.55 R_o 2053 UT

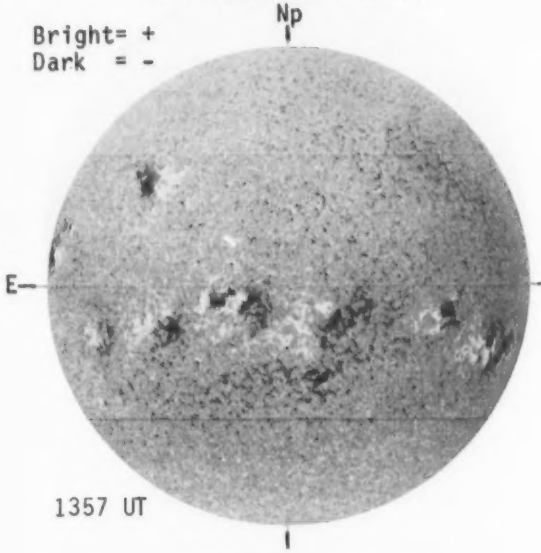
Sp

67
Apr 83

A P R I L 15, 1 9 8 3 (P=-26.11, B_o=-5.63, L_o= 309.02)

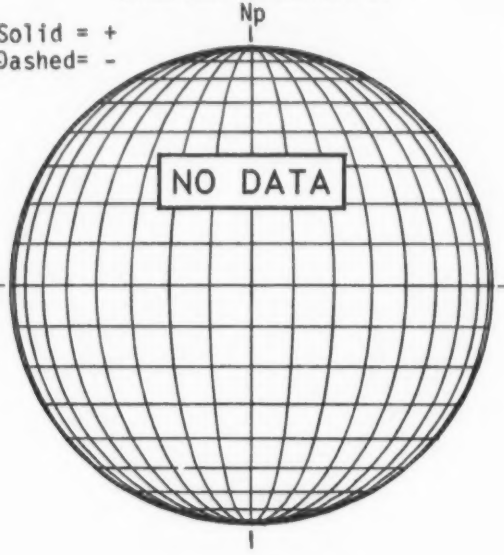
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

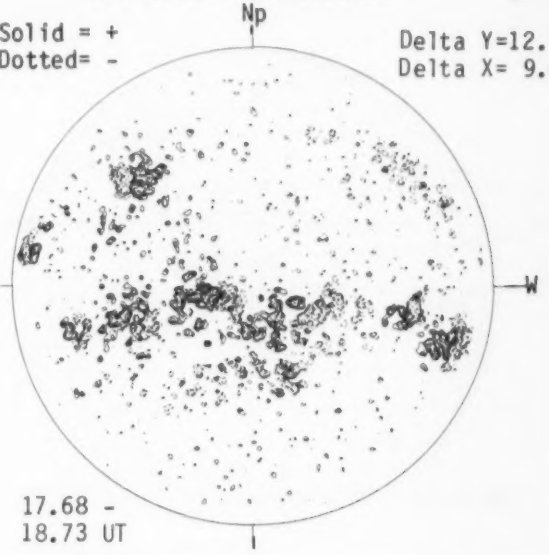
Solid = +
Dashed= -



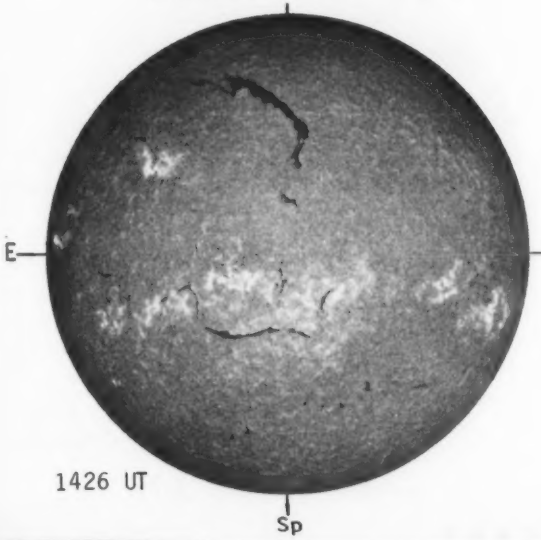
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

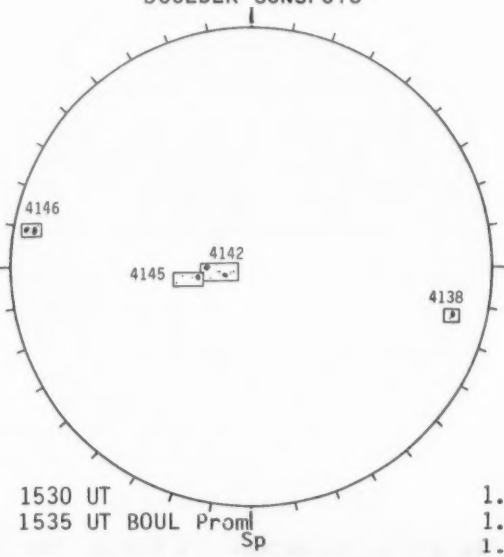
Delta Y=12.7
Delta X= 9.6



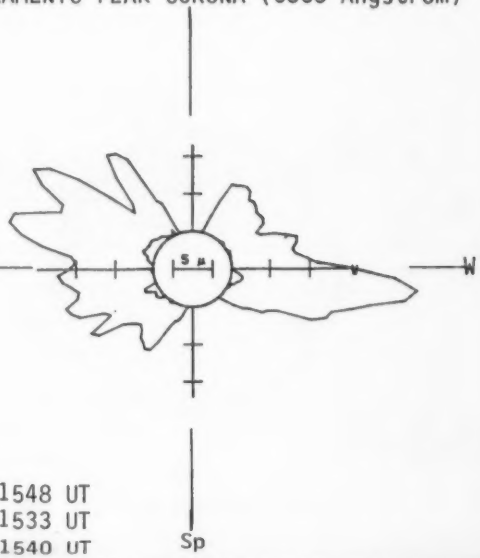
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 16, 1 9 8 3 (P=-26.05, B_o=-5.55, L_o= 295.81)

1426 UT

Sp

1530 UT
1535 UT BOUL Prom

Sp

1.15 R_o 1548 UT
1.35 R_o 1533 UT
1.55 R_o 1540 UT

Sp

A P R I L 16, 1 9 8 3 (P=-26.05, B_o=-5.55, L_o= 295.81)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

E

1452 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

2207 UT

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6

Np

W

17.88 -
18.90 UT

SACRAMENTO PEAK H-ALPHA

E

1611 UT

Sp

BOULDER SUNSPOTS

4146
4142
4145
4138
4148

1550 UT
1615 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

5 μ

W

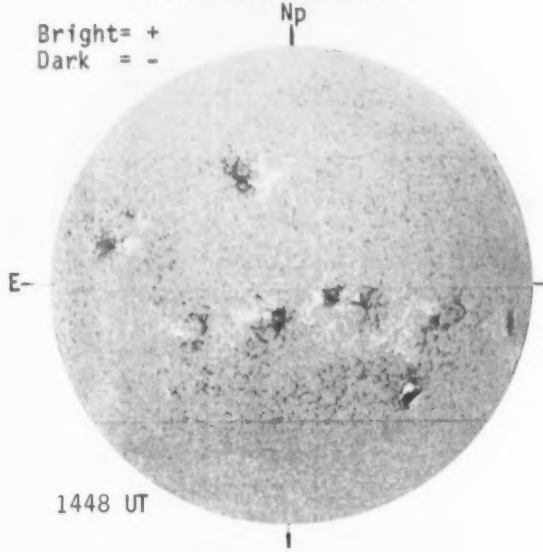
1.15 R_o 1817 UT
1.35 R_o 1745 UT
1.55 R_o 1751 UT

Sp

A P R I L 17, 1 9 8 3 (P=-25.98, B_0=-5.47, L_0= 282.61)

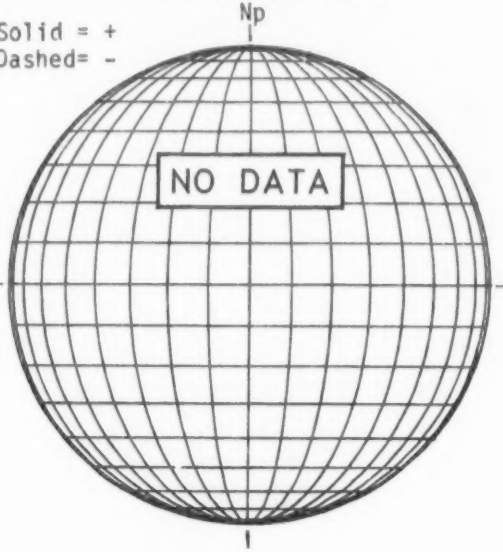
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

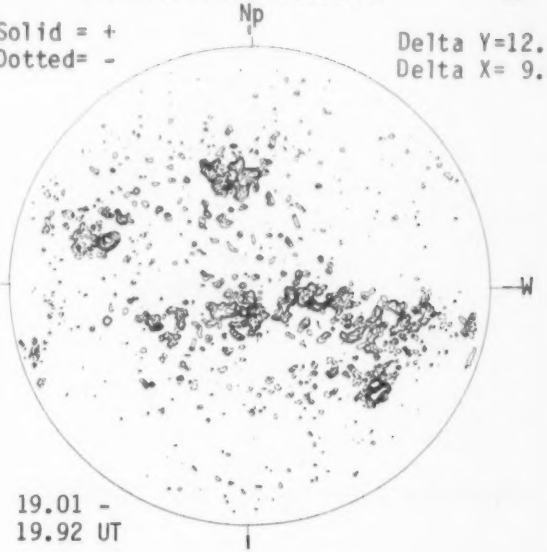
Solid = +
Dashed= -



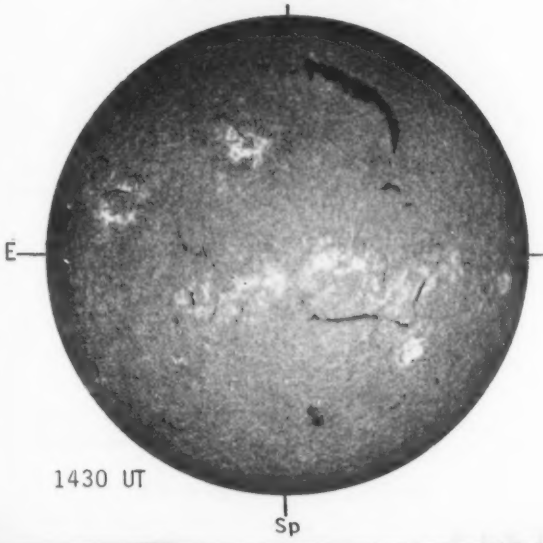
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

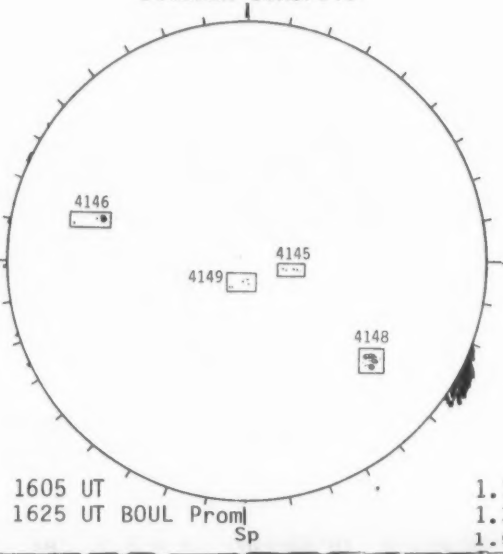
Delta Y=12.7
Delta X= 9.6



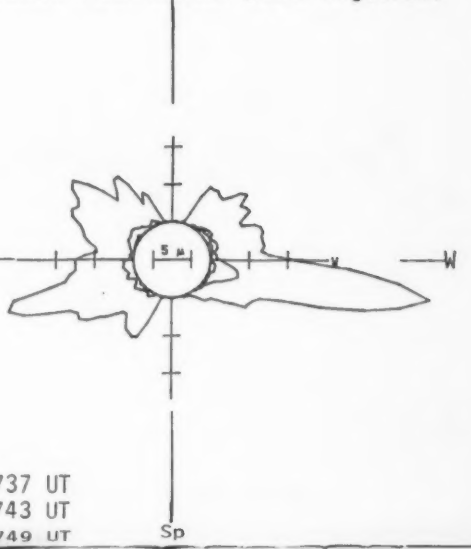
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 18, 1 9 8 3 (P=-25.91, B_0=-5.39, L_0= 269.40)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

1430 UT

Sp

1605 UT
1625 UT BOUL Prom

Sp

1.15 R_O 1737 UT
1.35 R_O 1743 UT
1.55 R_O 1749 UT

Sp

A P R I L 18, 1 9 8 3 (P=-25.91, B_O=-5.39, L_O= 269.40)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

NO DATA

E

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

NO DATA

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Np

NO DATA

W

SACRAMENTO PEAK H-ALPHA

E

1503 UT

Sp

BOULDER SUNSPOTS

4151
4146
4149
4145
4152
4148

1535 UT
1545 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

S

W

1.15 R_O 1750 UT
1.35 R_O 1721 UT
1.55 R_O 1727 UT

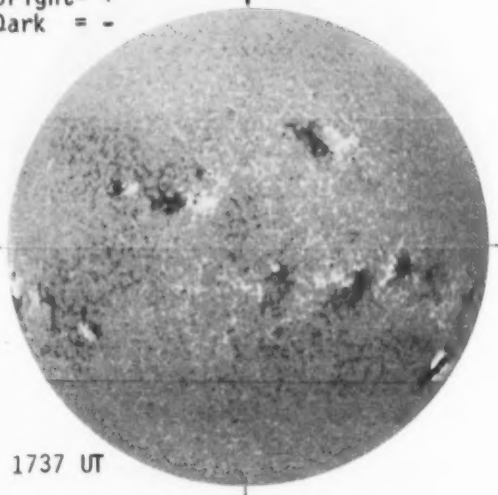
Sp

A P R I L 19, 1 9 8 3 (P=-25.83, B_o=-5.31, L_o= 256.20)

KITT PEAK MAGNETOGRAM

Np

Bright= +
Dark = -



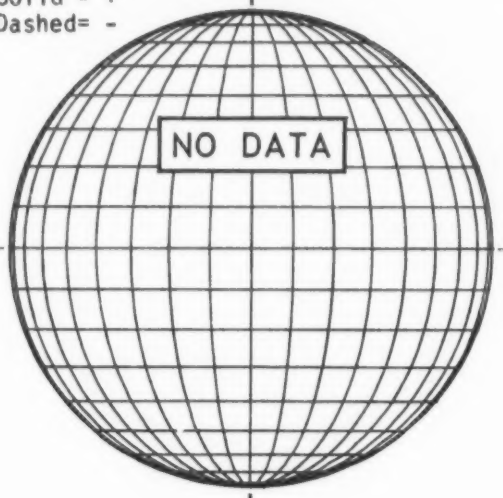
E

1737 UT

STANFORD MAGNETOGRAM

Np

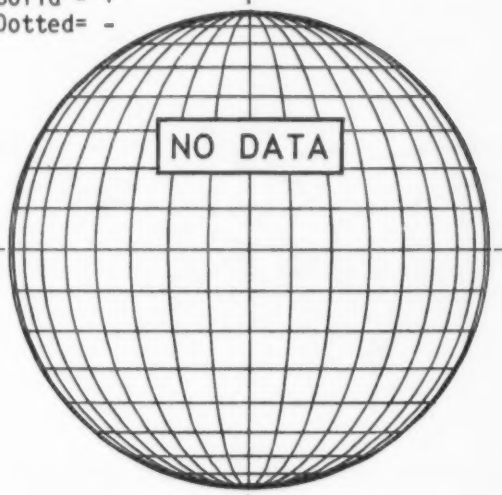
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

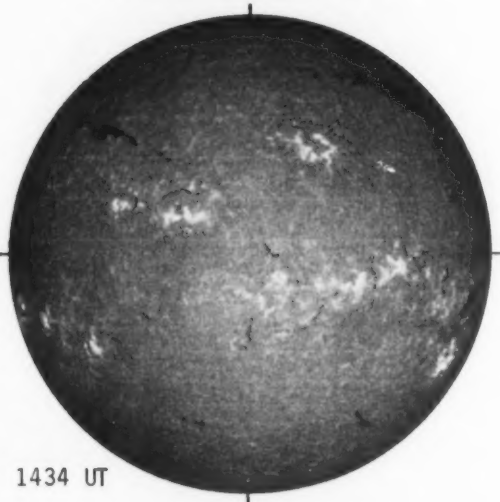
Np

Solid = +
Dotted= -



W

SACRAMENTO PEAK H-ALPHA

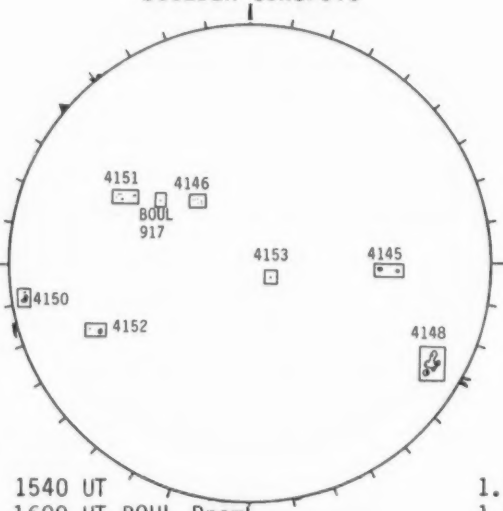


E

1434 UT

Sp

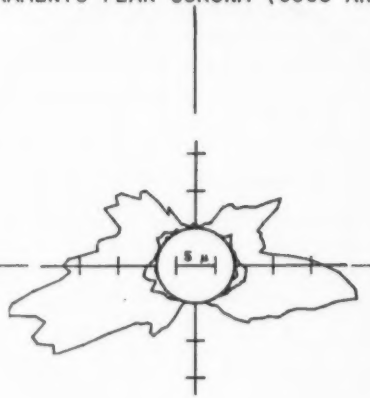
BOULDER SUNSPOTS



1540 UT
1600 UT BOUL Prom

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



W

1.15 R_o 1759 UT
1.35 R_o 1744 UT
1.55 R_o 1752 UT

Sp

A P R I L 20, 1 9 8 3 (P=-25.74, B_o=-5.22, L_o= 242.99)

1434 UT

Sp

1540 UT
1600 UT BOUL Prom

Sp

1.15 R_o 1759 UT
1.35 R_o 1744 UT
1.55 R_o 1752 UT

Sp

A P R I L 20, 1 9 8 3 (P=-25.74, B_o=-5.22, L_o= 242.99)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np

NO DATA

E

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

NO DATA

MT. WILSON MAGNETOGRAM

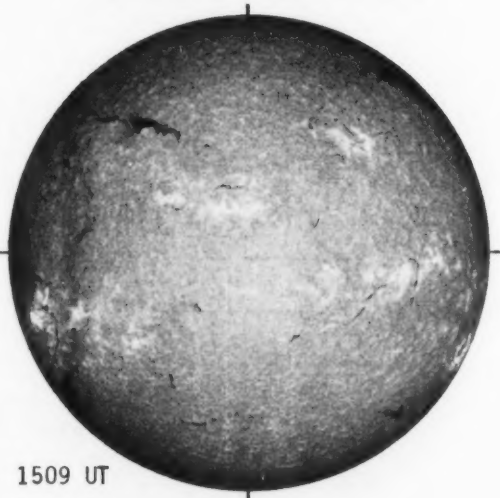
Solid = +
Dotted= -

Np

NO DATA

W

SACRAMENTO PEAK H-ALPHA

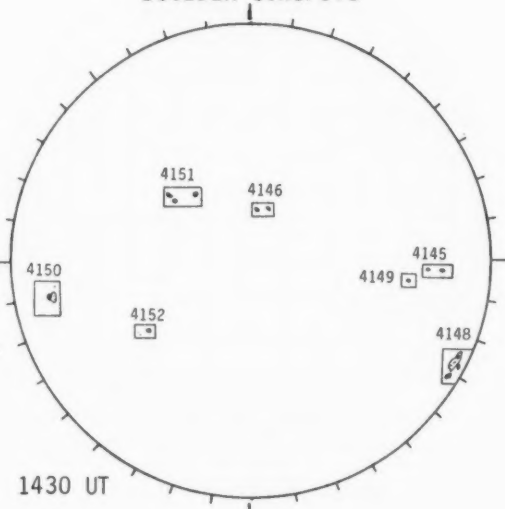


E

1509 UT

Sp

BOULDER SUNSPOTS



1430 UT

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

W

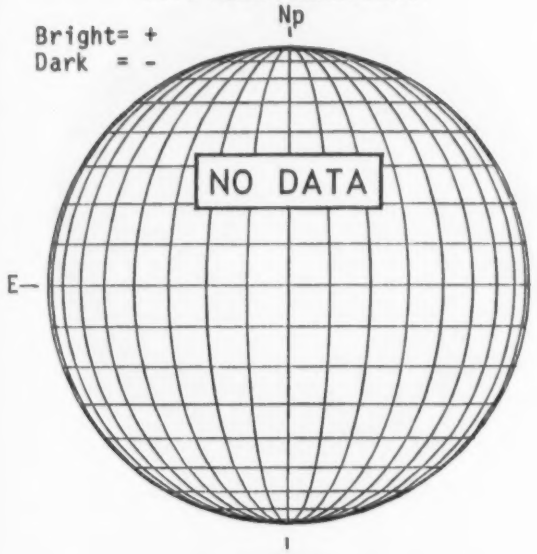
Sp

73
Apr 83

A P R I L 21, 1 9 8 3 (P=-25.64, B_o=-5.14, L_o= 229.78)

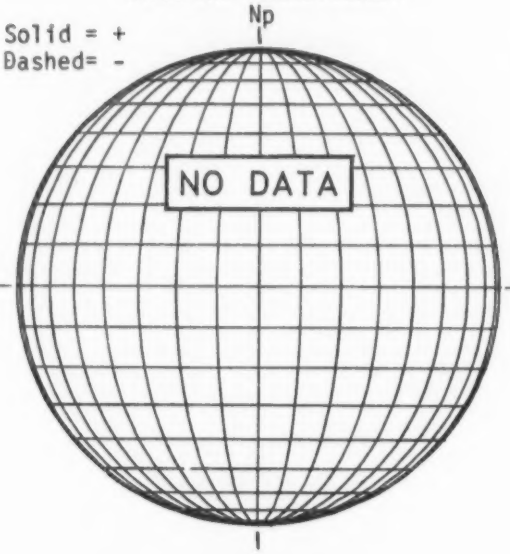
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



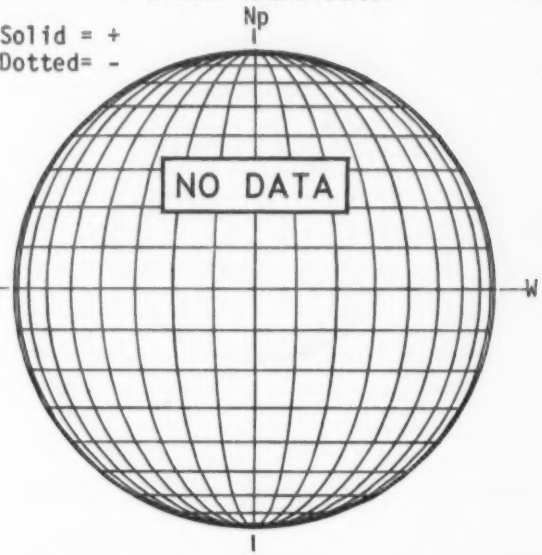
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

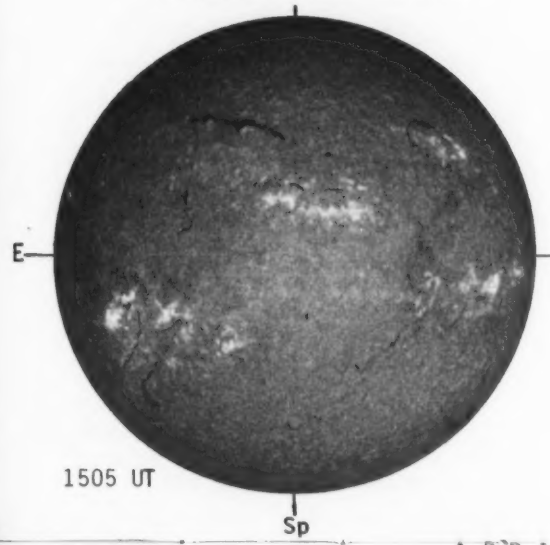


MT. WILSON MAGNETOGRAM

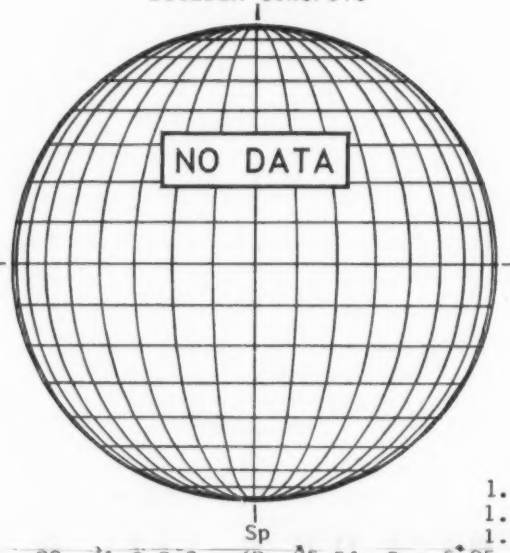
Solid = +
Dotted= -



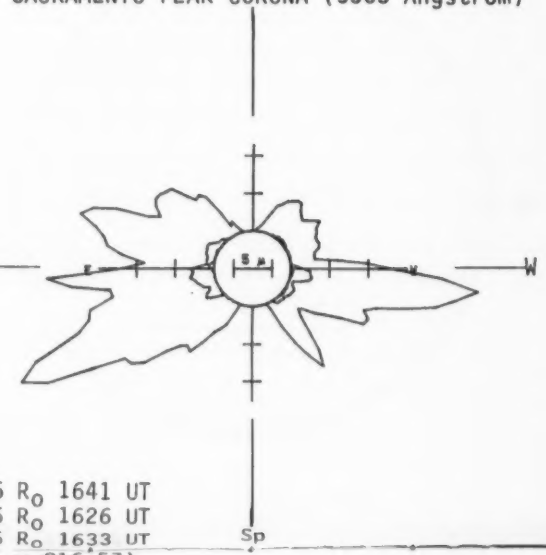
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1641 UT
1.35 R_o 1626 UT
1.55 R_o 1633 UT

A P R I L 22, 1 9 8 3 (P=-25.54, B_o=-5.05, L_o= 216.57)

KITT PEAK MAGNETOGRAM

STANFORD MAGNETOGRAM

MT. WILSON MAGNETOGRAM

1505 UT

Sp

Sp

1.15 R_O 1641 UT
1.35 R_O 1626 UT
1.55 R_O 1633 UT

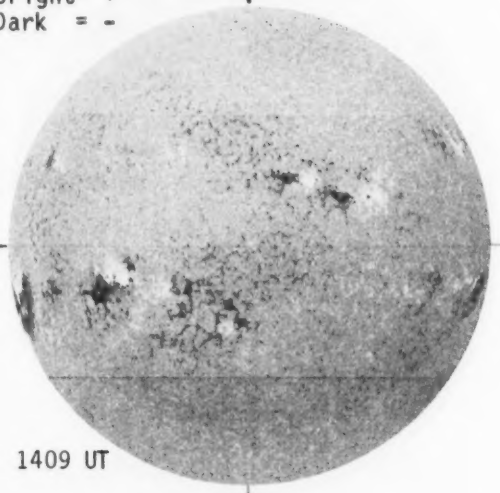
Sp

A P R I L 22, 1 9 8 3 (P=-25.54, B_O=-5.05, L_O= 216.57)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np



E

1409 UT

Sp

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

NO DATA

MT. WILSON MAGNETOGRAM

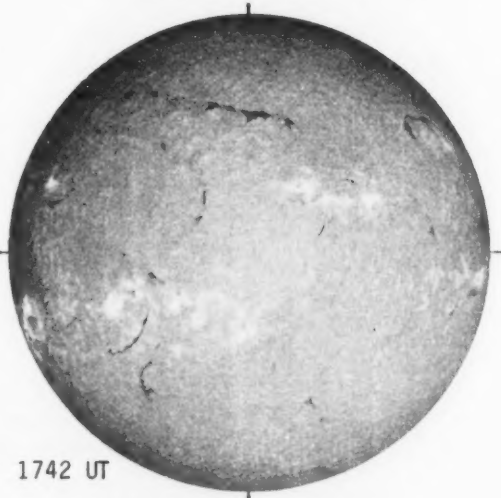
Solid = +
Dotted= -

Np

NO DATA

W

SACRAMENTO PEAK H-ALPHA



E

1742 UT

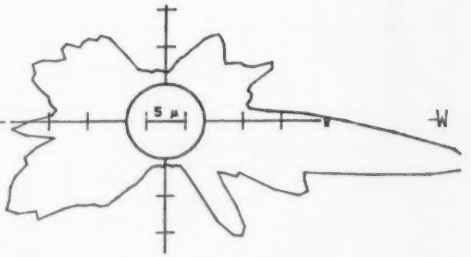
Sp

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



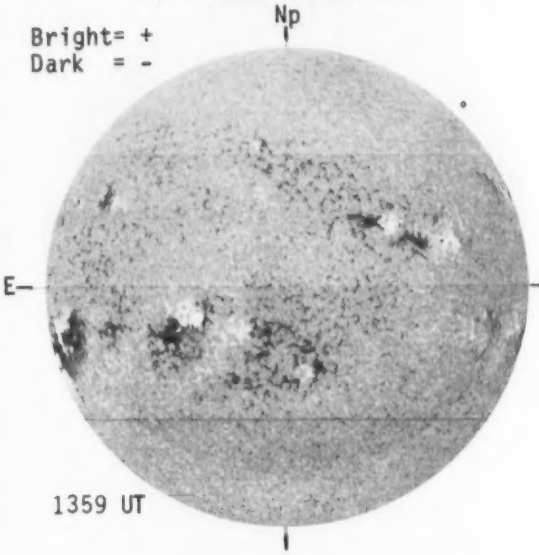
1.15 R_O 2038 UT

Sp

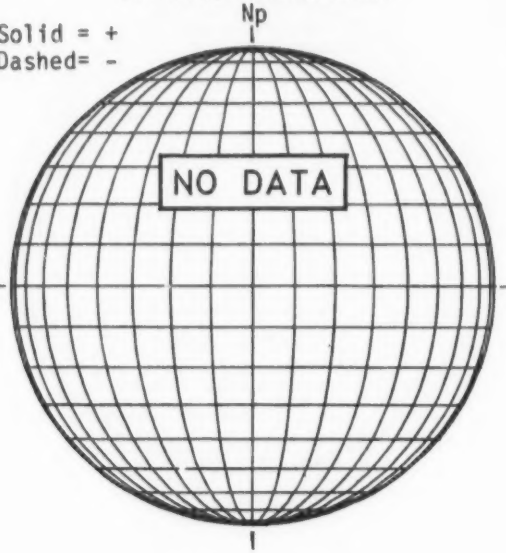
75
Apr 83

A P R I L 23, 1 9 8 3 (P=-25.43, B_o=-4.96, L_o= 203.36)

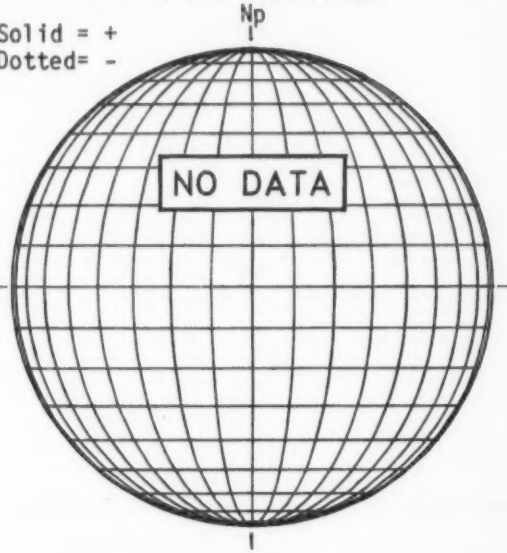
KITT PEAK MAGNETOGRAM



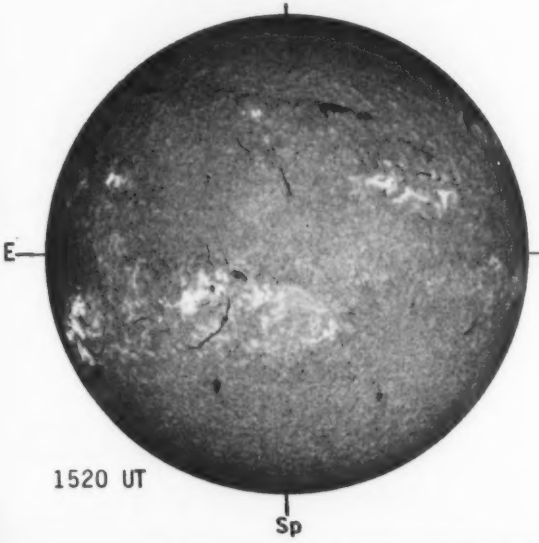
STANFORD MAGNETOGRAM



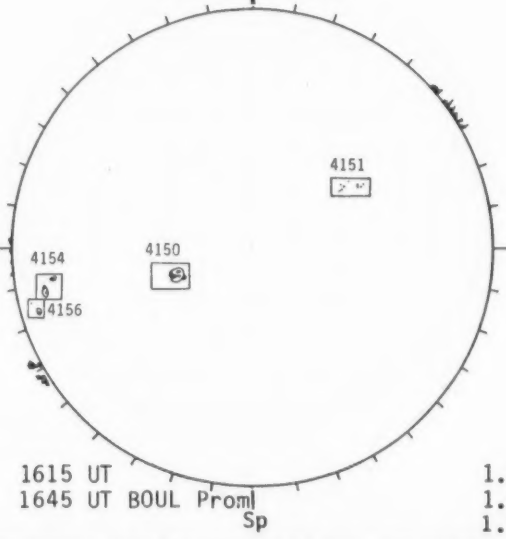
MT. WILSON MAGNETOGRAM



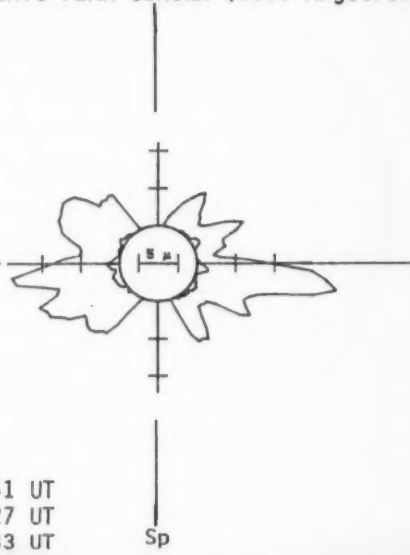
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 24, 1 9 8 3 (P=-25.31, B_o=-4.87, L_o= 190.15)

1520 UT

Sp

1615 UT
1645 UT BOUL Promi

Sp

1.15 R_o 1541 UT
1.35 R_o 1527 UT
1.55 R_o 1533 UT

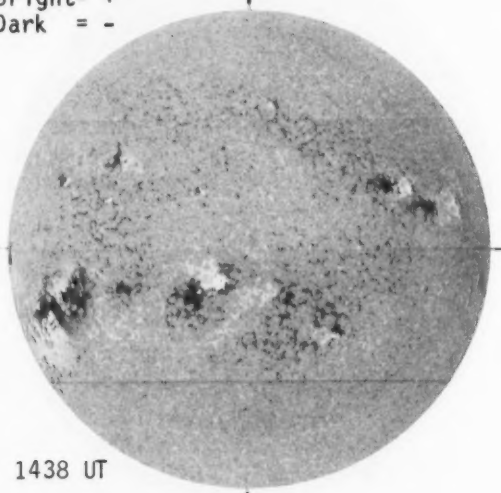
Sp

A P R I L 24, 1 9 8 3 (P=-25.31, B_o=-4.87, L_o= 190.15)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np



E

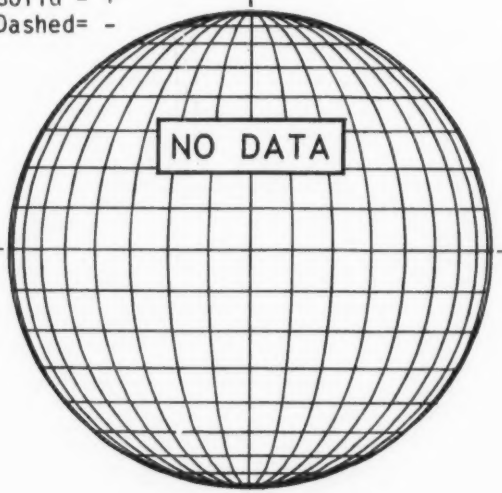
1438 UT

Sp

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

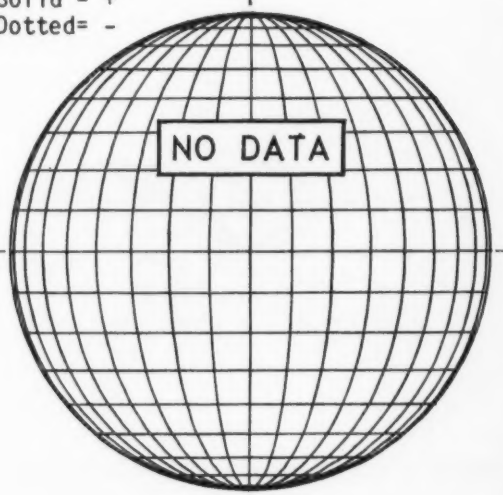


Sp

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Np



W

Sp

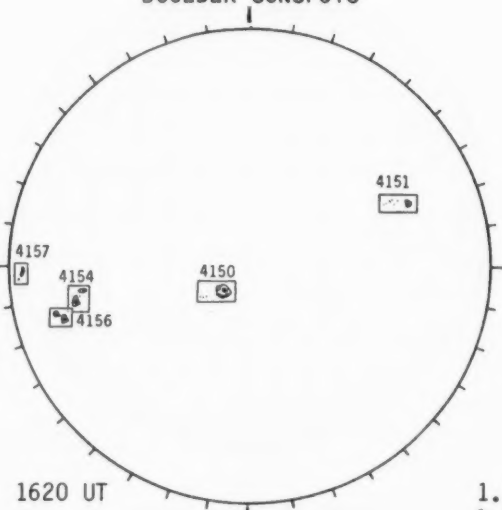
SACRAMENTO PEAK H-ALPHA

E

1425 UT

Sp

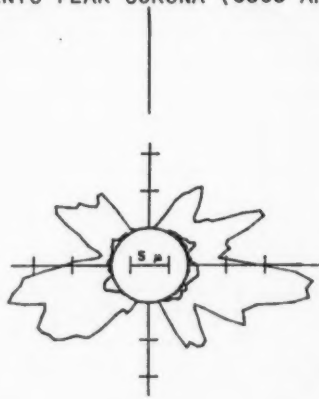
BOULDER SUNSPOTS



1620 UT

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)



W

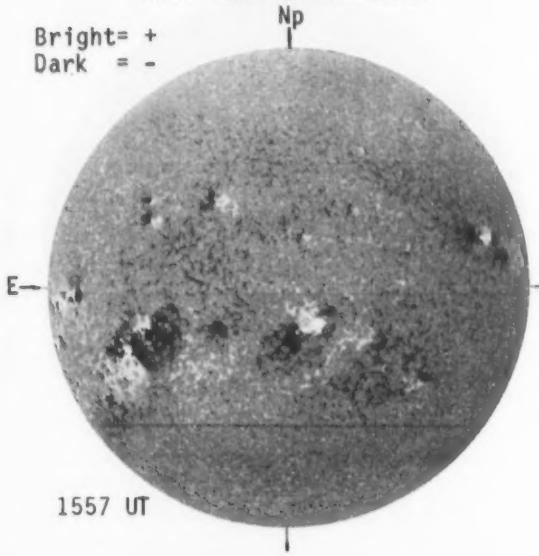
1.15 R_o 1535 UT
1.35 R_o 1521 UT
1.55 R_o 1528 UT

Sp

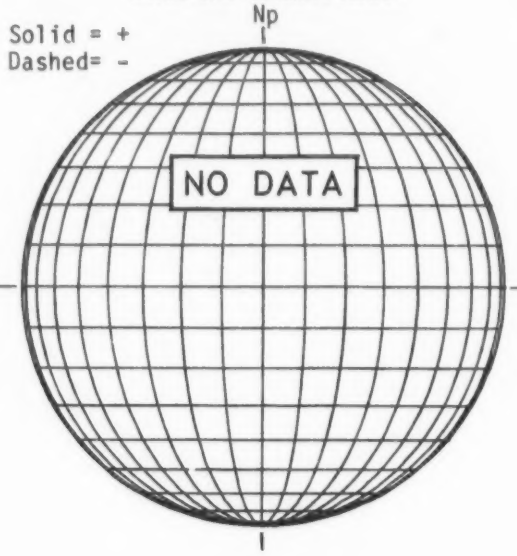
77
Apr 83

A P R I L 25, 1 9 8 3 (P=-25.18, B_o=-4.78, L_o= 176.94)

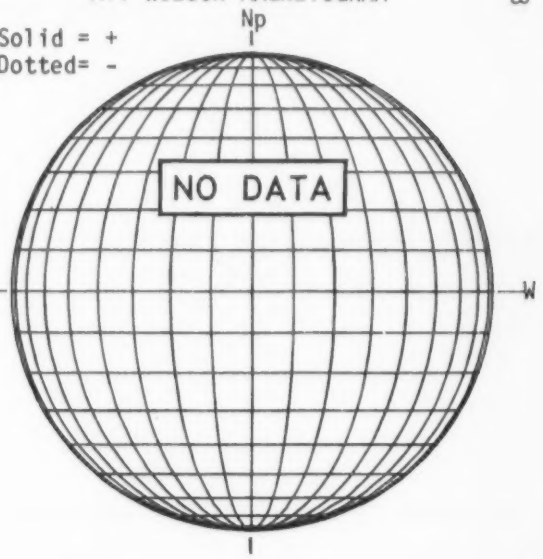
KITT PEAK MAGNETOGRAM



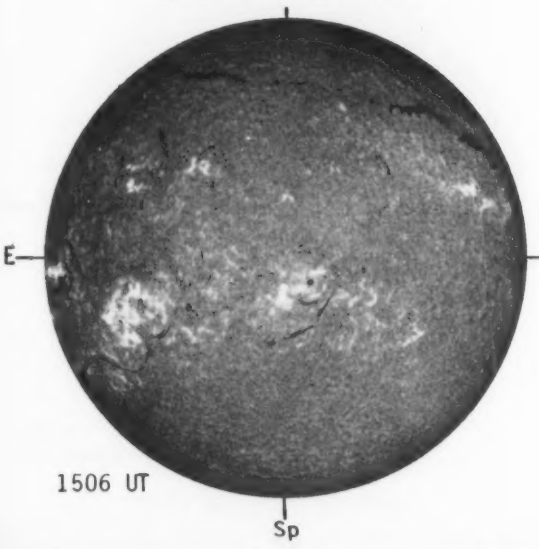
STANFORD MAGNETOGRAM



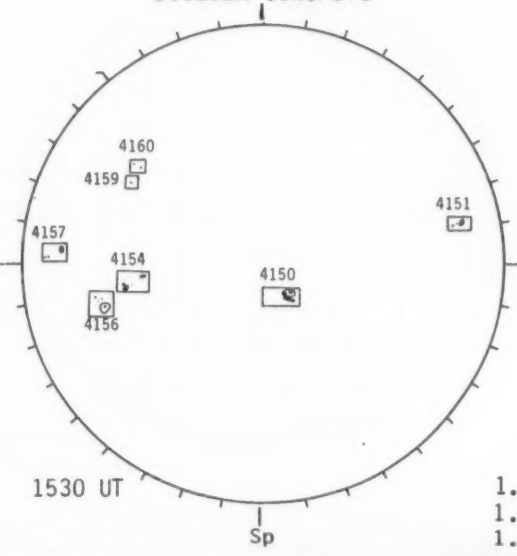
MT. WILSON MAGNETOGRAM



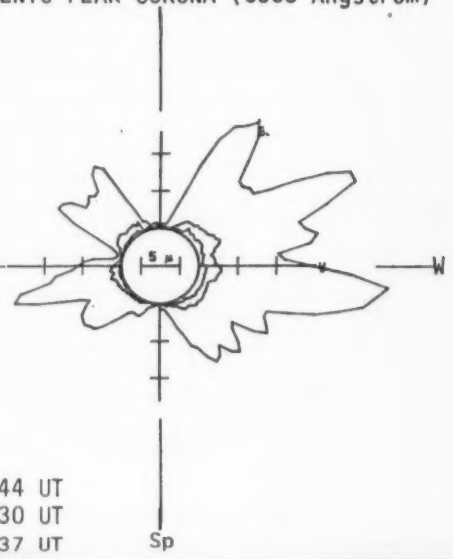
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 26, 1 9 8 3 (P=-25.05, B_o=-4.68, L_o= 163.73)

1506 UT

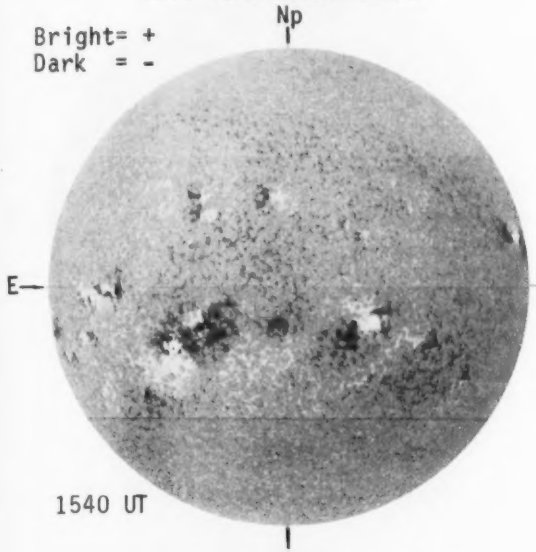
1530 UT

1.15 R_o 1944 UT
1.35 R_o 1930 UT
1.55 R_o 1937 UT

A P R I L 26, 1 9 8 3 (P=-25.05, B_o=-4.68, L_o= 163.73)

KITT PEAK MAGNETOGRAM

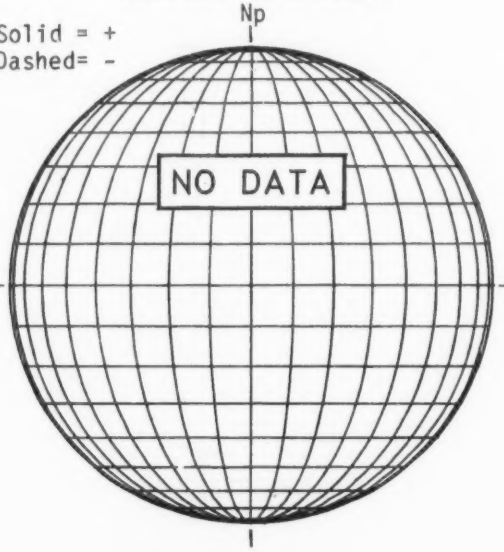
Bright= +
Dark = -



1540 UT

STANFORD MAGNETOGRAM

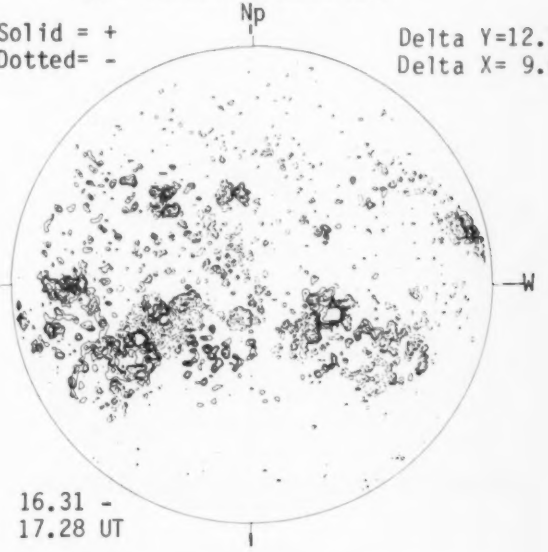
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

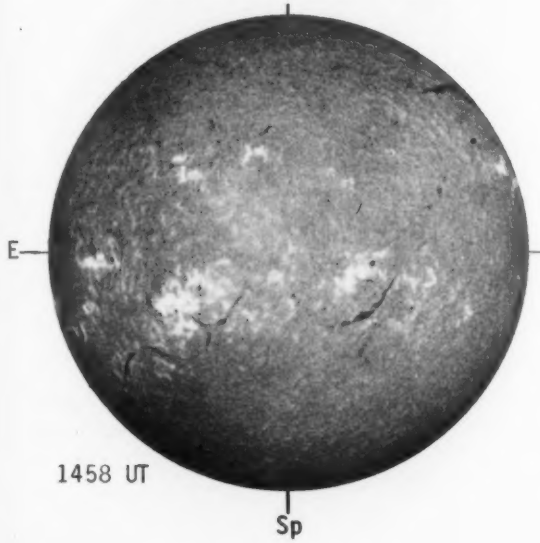
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



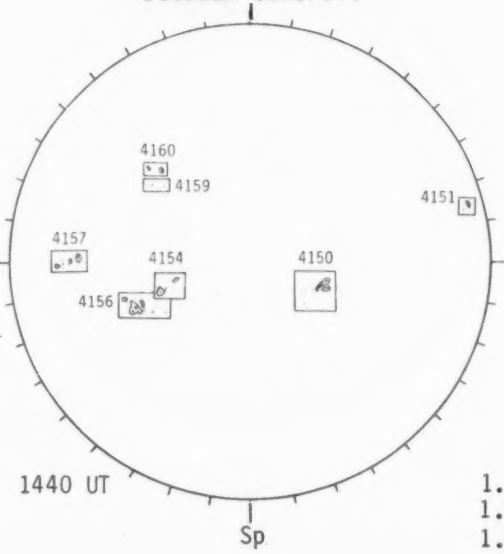
16.31 -
17.28 UT

SACRAMENTO PEAK H-ALPHA



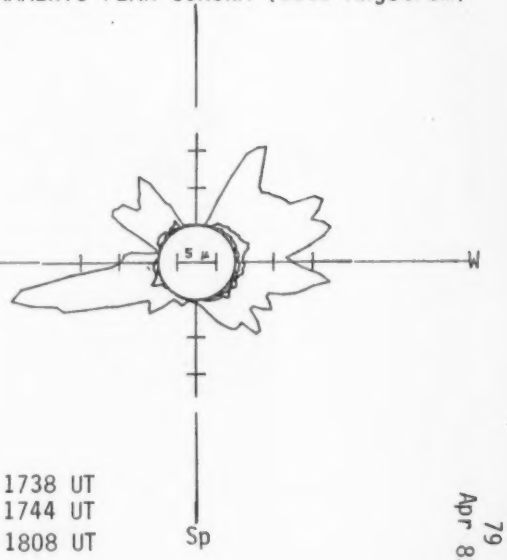
1458 UT

BOULDER SUNSPOTS



1440 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1738 UT
1.35 R_o 1744 UT
1.55 R_o 1808 UT

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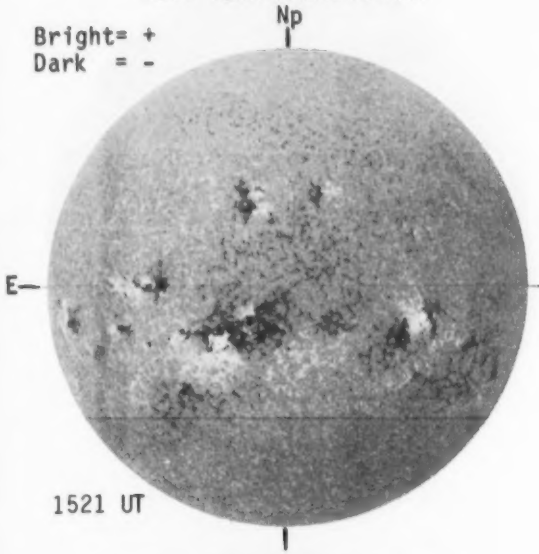
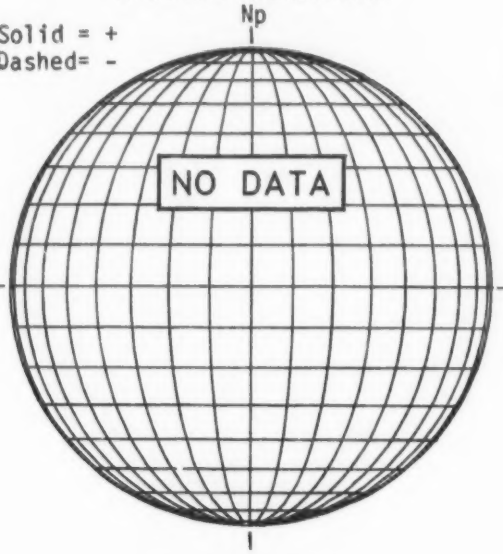
Apr 83

A P R I L 27, 1 9 8 3 (P=-24.91, B_o=-4.59, L_o= 150.52)

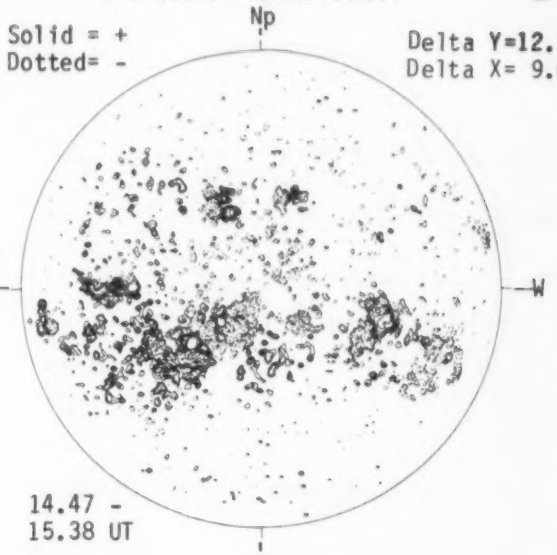
KITT PEAK MAGNETOGRAM



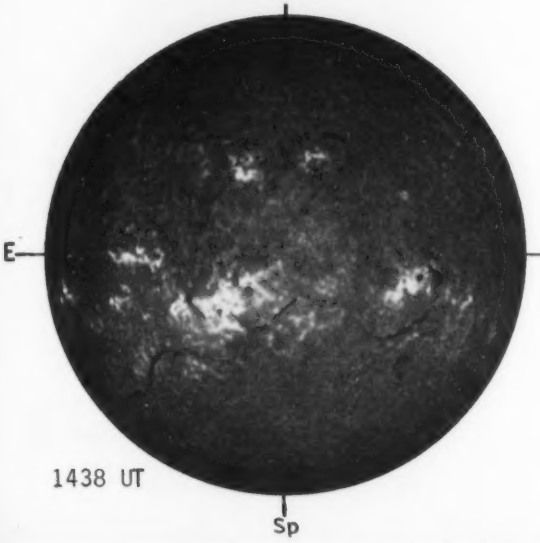
STANFORD MAGNETOGRAM



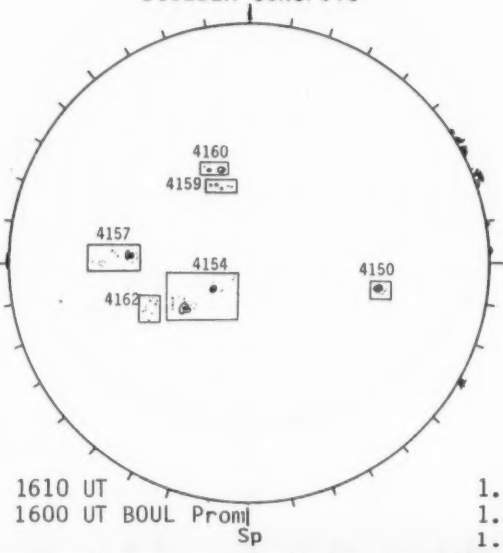
MT. WILSON MAGNETOGRAM



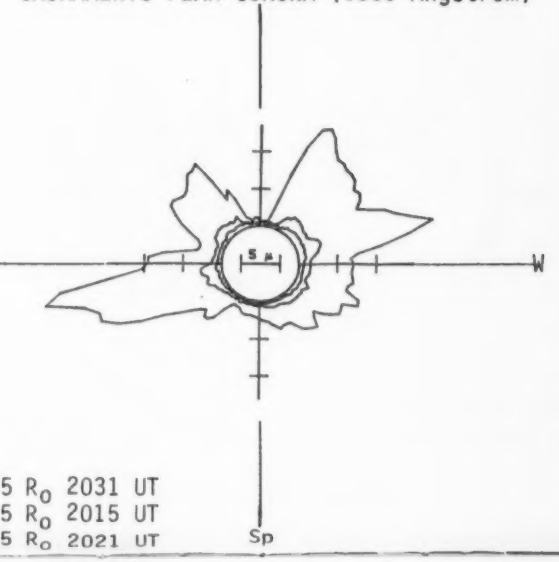
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 28, 1 9 8 3 (P=-24.76, B_o=-4.49, L_o= 137.30)

1438 UT

Sp

1610 UT
1600 UT BOUL Prom

Sp

1.15 R_o 2031 UT
1.35 R_o 2015 UT
1.55 R_o 2021 UT

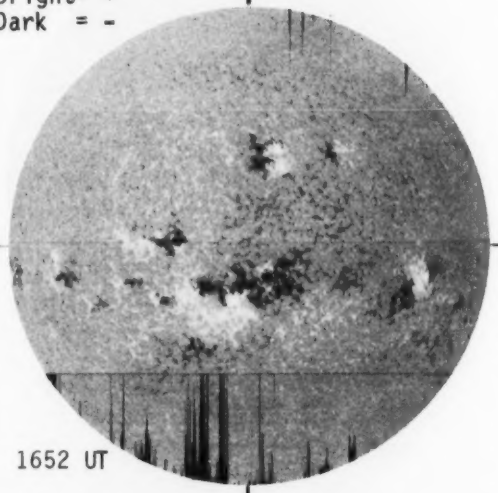
Sp

A P R I L 28, 1 9 8 3 (P=-24.76, B_o=-4.49, L_o= 137.30)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

Np



E

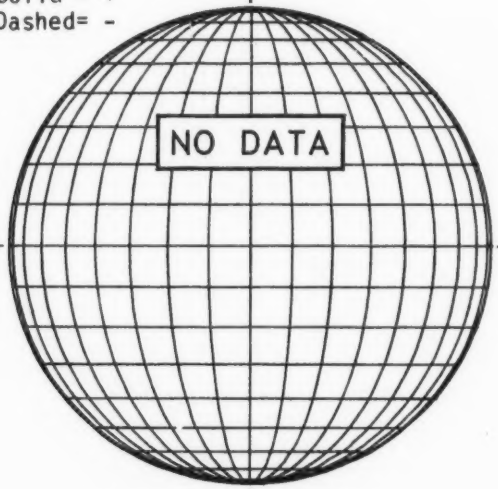
1652 UT

Sp

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

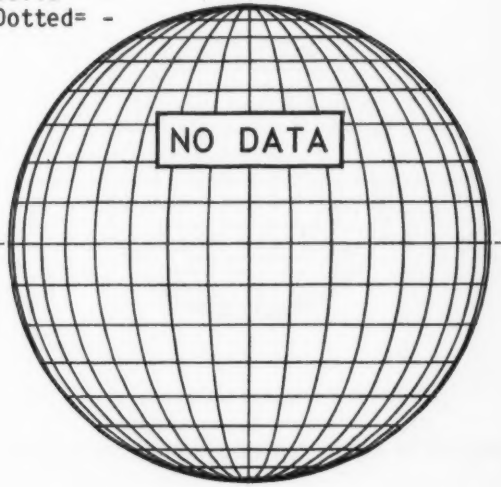


Sp

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

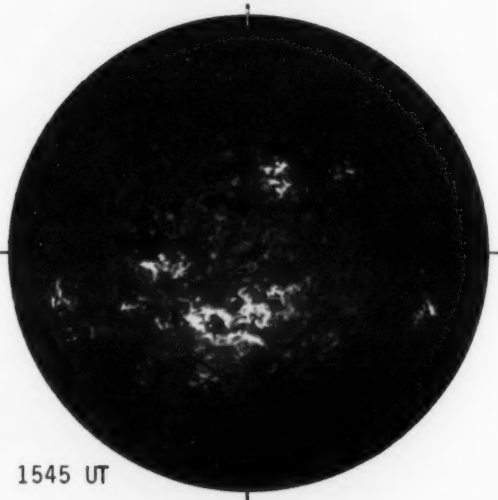
Np



W

Sp

BOULDER H-ALPHA

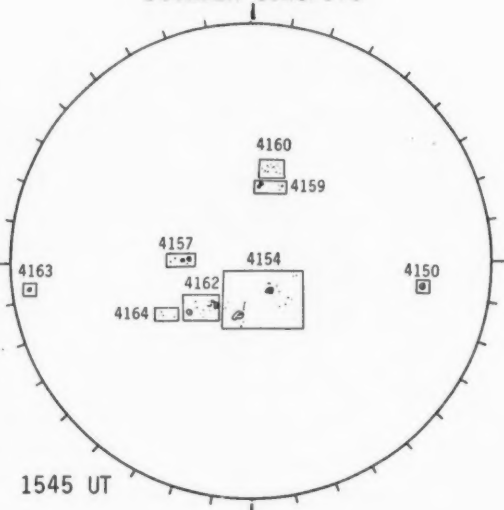


E

1545 UT

Sp

BOULDER SUNSPOTS



1545 UT

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

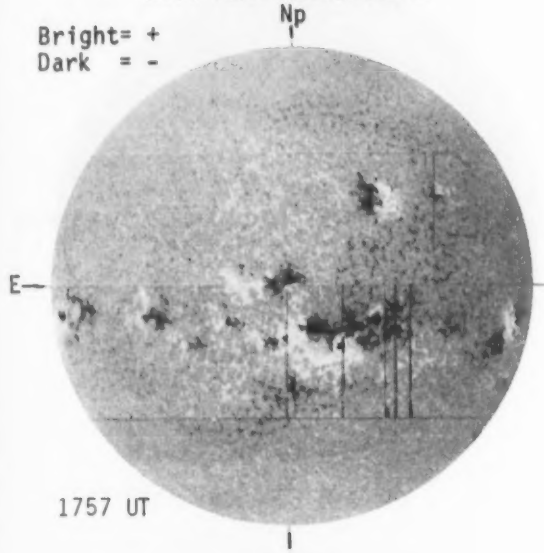
W

Sp

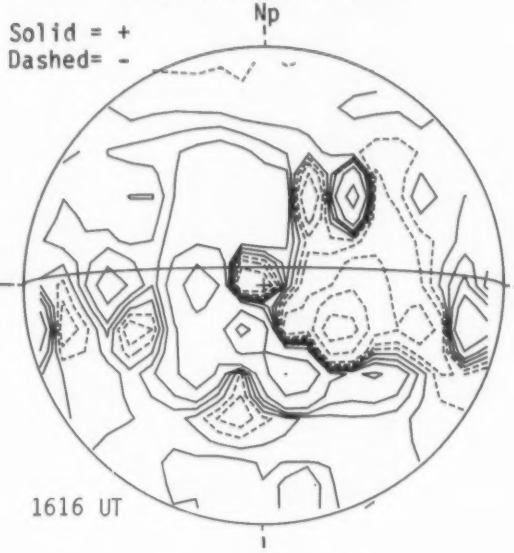
81
Apr 83

A P R I L 29, 1 9 8 3 (P=-24.61, B_o=-4.40, L_o= 124.09)

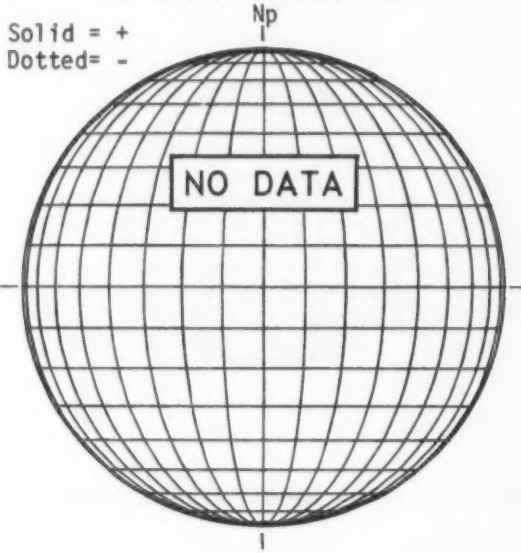
KITT PEAK MAGNETOGRAM



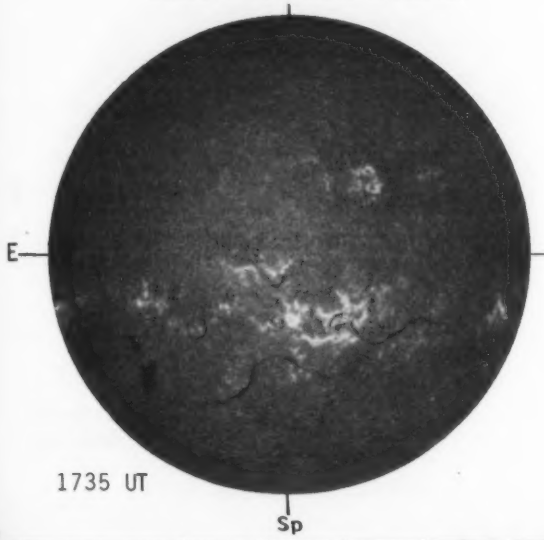
STANFORD MAGNETOGRAM



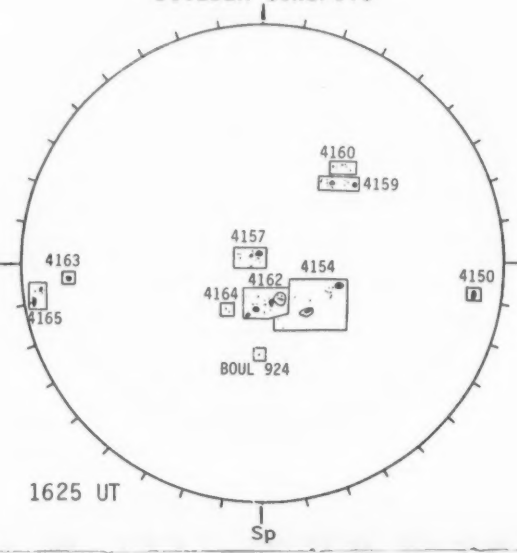
MT. WILSON MAGNETOGRAM



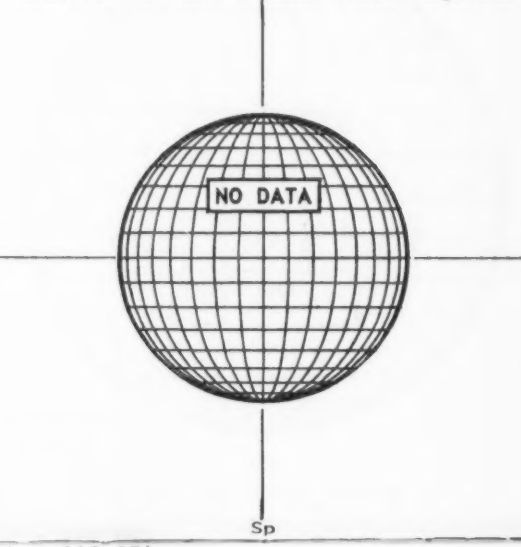
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



A P R I L 30, 1 9 8 3 (P=-24.44, B_o=-4.30, L_o= 110.87)

1735 UT

1625 UT

Sp

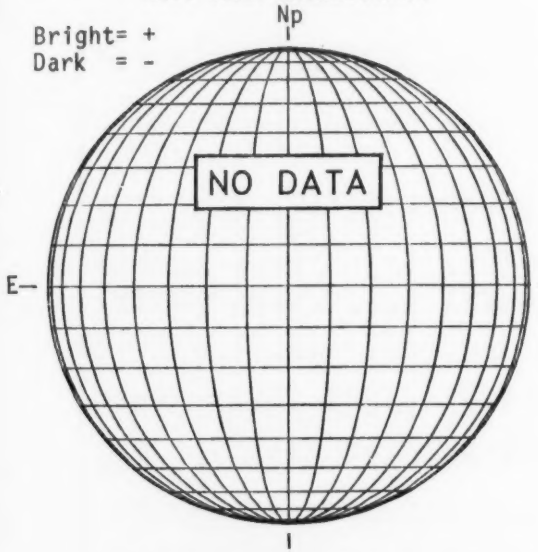
Sp

Sp

A P R I L 30, 1 9 8 3 (P=-24.44, B_o=-4.30, L_o= 110.87)

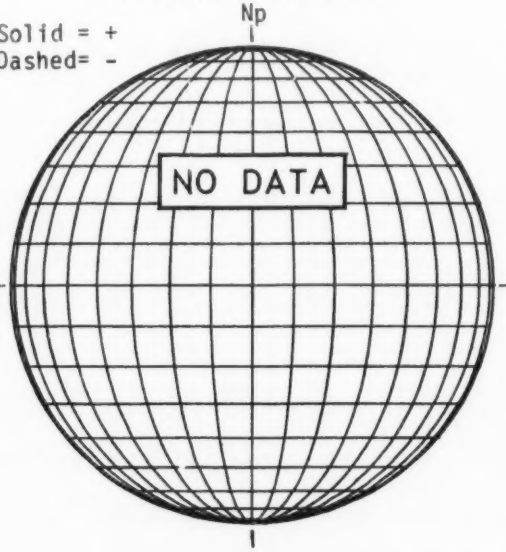
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



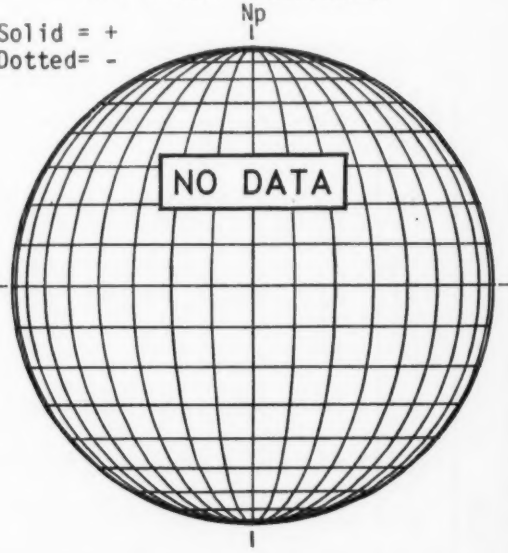
STANFORD MAGNETOGRAM

Solid = +
Dashed= -

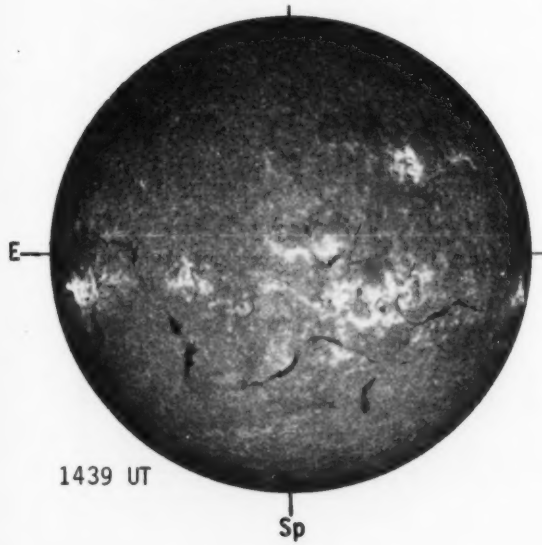


MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

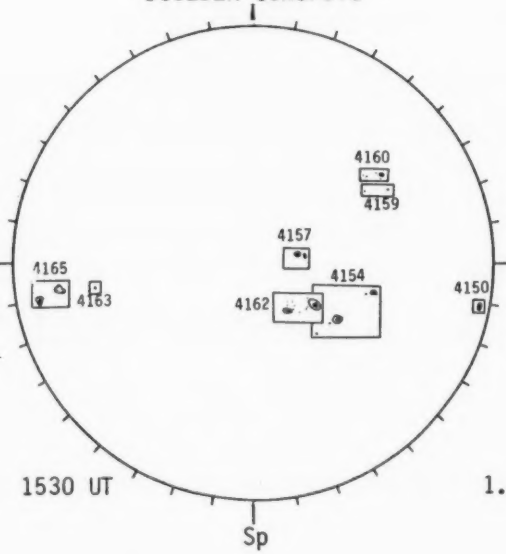


SACRAMENTO PEAK H-ALPHA



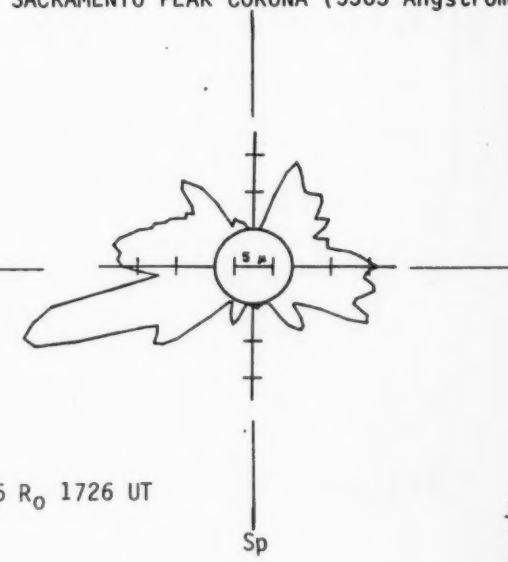
1439 UT

BOULDER SUNSPOTS



1530 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_o 1726 UT

83
Apr 83

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

APRIL 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4127		HOLL	03	25	1605	S16	E88	04	1.3		A	AXX		1		3
4127		PALE	03	25	1849	S16	E88	04	1.5		A	AXX	10	1	1	4
4127		MANI	03	25	2305	S16	E86	04	1.5			DSO	160	2	4	3
4127		RAMY	03	26	1215	S19	E78	04	1.5		B	DAO	220	7	7	4
4127	23605	MWIL	03	26	1600	S17	E76	04	1.4	3	(BF)					
4127		PALE	03	26	1816	S16	E75	04	1.5		B	CSO	90	5	5	3
4127		MANI	03	26	2312	S16	E73	04	1.5			DSO	120	5	5	3
4127		LEAR	03	27	0228	S15	E70	04	1.4		B	DSO	110	4	6	2
4127		HOLL	03	27	1525	S15	E62	04	1.3		B	CSO	80	6	5	4
4127	23605	MWIL	03	27	1530	S16	E64	04	1.5	4	(BF)					
4127		BOUL	03	27	1530	S17	E62	04	1.4		B	CSO	60	3	3	3
4127		PALE	03	27	1745	S15	E62	04	1.4		B	DSO	90	4	5	4
4127		MANI	03	27	2314	S16	E60	04	1.5			DSO	120	5	4	3
4127		MANI	03	29	0001	S16	E47	04	1.6			DSO	80	4	4	3
4127		HOLL	03	29	1456	S16	E37	04	1.4		B	CSO	70	2	4	4
4127	23605	MWIL	03	29	1530	S16	E38	04	1.5	5	(AP)					
4127		BOUL	03	29	1620	S16	E36	04	1.4		B	CSO	30	3	4	3
4127		PALE	03	29	1805	S17	E36	04	1.5		B	CSO	80	2	4	4
4127		MANI	03	30	0020	S17	E33	04	1.5			CSO	90	5	4	3
4127		ATHN	03	30	0600	S18	E32	04	1.7			DHO	130	5	4	1
4127		LEAR	03	30	0705	S17	E29	04	1.5		B	DSO	120	9	3	3
4127		HOLL	03	30	1444	S17	E26	04	1.6		B	DSO	140	5	5	3
4127	23605	MWIL	03	30	1530	S17	E25	04	1.5	4	(BF)					
4127		BOUL	03	30	1635	S17	E23	04	1.4		B	DSI	120	10	4	2
4127		PALE	03	30	1820	S17	E22	04	1.4		B	DSO	130	12	5	4
4127		LEAR	03	31	0009	S17	E20	04	1.5		B	DSO	220	12	5	3
4127		RAMY	03	31	1316	S17	E13	04	1.5		B	DAO	100	6	5	2
4127		HOLL	03	31	1513	S17	E12	04	1.5		B	DSO	160	11	4	3
4127	23605	MWIL	03	31	1545	S17	E12	04	1.6	5	(BF)					
4127		PALE	03	31	1743	S17	E10	04	1.5		B	DSO	120	16	5	4
4127		LEAR	04	01	0010	S17	E07	04	1.5		B	DSO	250	19	6	3
4127		MANI	04	01	0134	S17	E08	04	1.7			DSO	250	17	5	2
4127		RAMY	04	01	1210	S18	E01	04	1.6		BD	DAO	160	18	5	4
4127		HOLL	04	01	1528	S17	W02	04	1.5		B	DHO	190	23	5	3
4127		BOUL	04	01	1537	S16	W01	04	1.6		B	DSO	140	12	5	2
4127	23605	MWIL	04	01	1600	S17	W02	04	1.5	5	(D)					
4127		PALE	04	01	1815	S16	W02	04	1.6		BD	DAO	200	19	7	4
4127		MANI	04	02	0049	S17	W06	04	1.6			DAO	260	20	7	3
4127		LEAR	04	02	0058	S17	W07	04	1.5		BD	DSO	120	24	7	3
4127		ATHN	04	02	0715	S17	W08	04	1.7			DSO	90	7	4	2
4127		RAMY	04	02	1330	S18	W14	04	1.5		BD	DAO	120	17	6	2
4127		HOLL	04	02	1605	S17	W15	04	1.5		BGD	DAI	160	15	7	3
4127		PALE	04	02	1753	S17	W18	04	1.4		BD	DAO	160	17	6	3
4127	23605	MWIL	04	02	1815	S17	W17	04	1.5	5	(D)					
4127		LEAR	04	03	0110	S17	W20	04	1.5		BD	DAO	140	26	7	3
4127		ATHN	04	03	0850	S19	W22	04	1.7		B	DAO	70	9	3	3
4127		RAMY	04	03	1150	S17	W25	04	1.6		BD	DAO	110	23	7	3
4127		HOLL	04	03	1520	S16	W26	04	1.7		BGD	DAI	140	9	5	3
4127	23605	MWIL	04	03	1530	S17	W26	04	1.7	4	(D)					
4127		PALE	04	03	1805	S16	W29	04	1.6		BGD	DAO	120	13	5	4
4127		MANI	04	03	2357	S16	W31	04	1.6			DAO	150	12	6	3
4127		LEAR	04	04	0100	S15	W32	04	1.6		BD	DSO	90	9	4	3
4127		RAMY	04	04	1130	S16	W37	04	1.7		BD	DAO	150	8	5	3
4127	23605	MWIL	04	04	1600	S16	W40	04	1.6	4	(D)					
4127		PALE	04	04	1810	S16	W42	04	1.6		BD	DAO	100	10	5	3
4127		MANI	04	05	0003	S16	W45	04	1.6			DSO	480	9	6	3
4127		LEAR	04	05	0031	S16	W45	04	1.6		BD	DSO	150	9	4	3
4127		ATHN	04	05	0630	S17	W47	04	1.7			DSO	110	9	5	2
4127		RAMY	04	05	1231	S16	W52	04	1.6		BD	DAO	160	11	5	3
4127	23605	MWIL	04	05	1630	S17	W54	04	1.6	3	(D)					
4127		PALE	04	05	1840	S17	W56	04	1.5		BD	DAO	70	7	5	3
4127		LEAR	04	06	0020	S16	W57	04	1.7		BD	DAO	50	11	6	3
4127		ATHN	04	06	0605	S16	W62	04	1.5			DRO	100	4	5	2
4127		RAMY	04	06	1157	S16	W65	04	1.6		B	CSO	40	3	6	3
4127		BOUL	04	06	1525	S17	W66	04	1.6		B	CSO	30	3	3	3
4127	23605	MWIL	04	06	1530	S17	W66	04	1.6	4	(AP)					
4127		PALE	04	06	1824	S16	W70	04	1.5		B	CSO	40	4	3	4
4127		MANI	04	07	0006	S17	W73	04	1.5			CSO	120	3	4	3
4127		LEAR	04	07	0042	S16	W73	04	1.5		B	CSO	30	4	7	3
4127		ATHN	04	07	0600	S16	W74	04	1.6			CRO	60	4	3	3
4127		RAMY	04	07	1205	S15	W76	04	1.7		A	HAX	60	1	1	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

APRIL 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hem)	Spot Count	Long. Extent (Deg)	Qual
4127		BOUL	04	07	1520	S14	W81	04	1.5		A	AXX	10	1	1	3
4127	23605	MWIL	04	07	1630	S16	W80	04	1.6	3	(AP)					
4127		MANI	04	07	2321	S16	W86	04	1.4			HRX	140	1	1	3
0001		LEAR	04	03	0110	S11	W15	04	1.9		B	BXO		2	2	3
0001		HOLL	04	03	1520	S10	W22	04	2.0		B	BXO	20	5	3	3
4129		HOLL	03	26	1448	S21	E78	04	1.6		A	AXX		1		2
4129	23604	MWIL	03	26	1600	S22	E80	04	1.8	2	(AF)					
4129		PALE	03	26	1816	S22	E80	04	1.9		A	AXX	10	1	1	3
4129		MANI	03	26	2312	S22	E77	04	1.9			AXX	20	1	1	3
4129		LEAR	03	27	0228	S21	E76	04	1.9		A	AXX		1		2
4129		HOLL	03	27	1525	S21	E66	04	1.7		B	CAO	30	2	4	4
4129		BOUL	03	27	1530	S21	E65	04	1.6		B	BXO	30	2	2	3
4129	23604	MWIL	03	27	1530	S21	E67	04	1.8	3	(AP)					
4129		PALE	03	27	1745	S21	E66	04	1.8		B	BXO	10	2	4	4
4129		MANI	03	27	2314	S21	E63	04	1.8			CRO	20	2	4	3
4129		MANI	03	29	0001	S21	E52	04	2.0			HRX	20	1	1	3
4129		HOLL	03	29	1456	S22	E42	04	1.9		A	AXX	20	1	1	4
4129	23604	MWIL	03	29	1530	S22	E42	04	1.9	4	(AP)					
4129		BOUL	03	29	1620	S22	E40	04	1.8		A	HSX	20	1	1	3
4129		PALE	03	29	1805	S22	E41	04	1.9		A	AXX	10	1	1	4
4129		MANI	03	30	0020	S22	E39	04	2.0			CRO	30	3	3	3
4129		ATHN	03	30	0600	S21	E34	04	1.9			CHO	60	2	4	1
4129		LEAR	03	30	0705	S22	E34	04	1.9		A	AXX	10	1	1	3
4129		HOLL	03	30	1444	S22	E29	04	1.8		A	AXX	10	1	1	3
4129	23604	MWIL	03	30	1530	S23	E28	04	1.8	3	(AP)					
4129		BOUL	03	30	1635	S22	E28	04	1.8		A	HRX	10	1	1	2
4129		PALE	03	30	1820	S22	E27	04	1.8		A	AXX	10	1	1	4
4129		LEAR	03	31	0009	S22	E24	04	1.9		A	AXX		1		3
4129		RAMY	03	31	1316	S22	E18	04	1.9		B	BXO	30	5	2	2
4129		HOLL	03	31	1513	S22	E16	04	1.9		A	AXX	10	1		3
4129	23604	MWIL	03	31	1545	S23	E16	04	1.9	3	(AP)					
4129		PALE	03	31	1743	S23	E16	04	2.0		B	BXO	20	4	3	4
4129		LEAR	04	01	0010	S22	E12	04	1.9		A	AXX	10	3	3	3
4129		MANI	04	01	0134	S21	E14	04	2.1			AXX	10	1	1	2
4129		RAMY	04	01	1210	S22	E05	04	1.9		B	BXO	10	2	3	4
4129		HOLL	04	01	1528	S23	E03	04	1.9		A	AXX	10	1	1	3
4129		BOUL	04	01	1537	S21	E04	04	2.0		A	AXX		1	1	2
4129	23604	MWIL	04	01	1600	S23	E03	04	1.9	4	(AP)					
4129		PALE	04	01	1815	S22	E03	04	2.0		A	AXX		1		4
4129		MANI	04	02	0049	S22	W01	04	2.0			AXX	10	1		3
4129		LEAR	04	02	0058	S23	W02	04	1.9		A	AXX		1	1	3
4129		RAMY	04	02	1330	S22	W09	04	1.9		B	BXO	10	2	4	2
4129		HOLL	04	02	1605	S21	W10	04	1.9		B	BXO	30	8	4	3
4129		PALE	04	02	1753	S21	W12	04	1.8		B	BXO	30	6	3	3
4129		LEAR	04	03	0110	S20	W15	04	1.9		B	BXO	10	4	3	3
4129		ATHN	04	03	0850	S22	W17	04	2.1		B	BXO	10	3	2	3
4129		RAMY	04	03	1150	S19	W21	04	1.9		B	BXO	10	2	3	3
4129		HOLL	04	03	1520	S19	W23	04	1.9		B	BXO	20	4	3	3
4129		PALE	04	03	1805	S19	W25	04	1.8		B	BXO	10	3	3	4
4129		MANI	04	03	2357	S19	W28	04	1.9			BXX	210	3	8	3
4129		LEAR	04	04	0100	S19	W28	04	1.9		A	AXX	10	2	1	3
4129		RAMY	04	04	1130	S18	W35	04	1.8		B	BXO	10	3	3	3
4129		PALE	04	04	1810	S19	W38	04	1.9		A	AXX		1		3
4129		MANI	04	05	0003	S19	W42	04	1.8			CAO	430	6	5	3
4129		RAMY	04	05	1231	S21	W51	04	1.6		A	AXX	20	1	1	3
4129		RAMY	04	06	1157	S19	W65	04	1.5		A	AXX	10	1	1	3
4136		HOLL	03	30	1444	S10	E41	04	2.7		A	AXX		1		3
4136		LEAR	04	04	0100	S12	W20	04	2.5		B	BXO	10	2	3	3
4136		RAMY	04	04	1130	S13	W25	04	2.6		B	CAO	20	4	3	3
4136	23619	MWIL	04	04	1600	S15	W27	04	2.6	1	(X)					
4136		PALE	04	04	1810	S12	W29	04	2.6		A	AXX	10	1	1	3
4133		RAMY	03	31	1316	S13	E34	04	3.1		A	AXX	10	1	1	2
4133		HOLL	03	31	1513	S14	E33	04	3.1		B	BXO	10	4	3	3
4133	23613	MWIL	03	31	1545	S14	E32	04	3.1	2	(B)					
4133		PALE	03	31	1743	S13	E32	04	3.2		A	AXX	10	2	2	4
4133		LEAR	04	01	0010	S12	E28	04	3.1		A	AXX	10	2	2	3
4133		MANI	04	01	0134	S12	E28	04	3.2			BXO	10	3	3	2

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

APRIL 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4133		RAMY	04	01	1210	S16	E19	04	2.9		A	AXX	10	1	1	4
4133		HOLL	04	01	1528	S15	E18	04	3.0		A	AXX	10	1	1	3
4133		BOUL	04	01	1537	S13	E19	04	3.1		B	BXO	10	4	4	2
4133	23613	MWIL	04	01	1600	S15	E17	04	3.0	3	(BP)					
4133		PALE	04	01	1815	S13	E17	04	3.0		B	BXO	20	4	4	4
4133		MANI	04	02	0049	S13	E14	04	3.1			BXO	20	5	4	3
4133		LEAR	04	02	0058	S15	E14	04	3.1		B	BXO	10	5	4	3
4133		HOLL	04	02	1605	S15	E04	04	3.0		A	AXX	10	2	2	3
4133		LEAR	04	03	0110	S14	E01	04	3.1		B	BXO	10	3	3	3
4133		MANI	04	03	2357	S13	W12	04	3.1			BXO	20	4	4	3
4139	23621	MWIL	04	06	1530	S06	W15	04	5.5	2	(B)					
4139		PALE	04	06	1824	S06	W16	04	5.6		B	BXO	10	3	3	4
4139		MANI	04	07	0006	S06	W19	04	5.6			CRO	30	3	3	3
4139		LEAR	04	07	0042	S07	W21	04	5.5		B	BXO	20	4	3	3
4139		ATHN	04	07	0600	S07	W22	04	5.6			BXO	10	2	3	3
4139		RAMY	04	07	1205	S08	W28	04	5.4		A	AXX	10	1	1	3
4137	23618	MWIL	04	03	1530	S09	E60	04	8.2	3	(AP)					
4137		MANI	04	03	2357	S08	E55	04	8.1			BXO	30	4	4	3
4137	23618	MWIL	04	04	1600	S10	E45	04	8.1	3	(AP)					
4137		MANI	04	05	0003	S08	E41	04	8.1			BXO	20	3	3	3
4137		LEAR	04	05	0031	S09	E41	04	8.1		A	AXX	10	2	2	3
4137		RAMY	04	05	1231	S10	E36	04	8.2		B	BXO	30	4	3	3
4137	23618	MWIL	04	05	1630	S09	E35	04	8.3	3	(B)					
4137		PALE	04	05	1840	S10	E32	04	8.2		B	CRO	40	7	4	3
4137		LEAR	04	06	0020	S10	E28	04	8.1		B	DSO	70	12	4	3
4137		RAMY	04	06	1157	S10	E22	04	8.2		B	DSO	70	9	5	3
4137		BOUL	04	06	1525	S08	E19	04	8.1		B	DSO	50	9	5	3
4137	23618	MWIL	04	06	1530	S10	E20	04	8.1	4	(B)					
4137		PALE	04	06	1824	S10	E17	04	8.0		B	DSO	90	15	6	4
4137		MANI	04	07	0006	S10	E15	04	8.1			DSO	120	19	7	3
4137		LEAR	04	07	0042	S09	E14	04	8.1		B	DSO	70	16	7	3
4137		ATHN	04	07	0600	S10	E11	04	8.1			DSO	70	9	7	3
4137		RAMY	04	07	1205	S10	E08	04	8.1		B	DAO	50	24	7	3
4137		BOUL	04	07	1520	S10	E07	04	8.2		B	DSO	90	15	9	3
4137	23618	MWIL	04	07	1630	S10	E05	04	8.1	4	(B)					
4137		MANI	04	07	2321	S10	E02	04	8.1			DAO	130	26	8	3
4137		ATHN	04	08	0710	S11	W04	04	8.0			ESO	90	18	12	3
4137		RAMY	04	08	1125	S10	W05	04	8.1		B	EAO	110	40	11	3
4137		BOUL	04	08	1455	S09	W06	04	8.2		B	DSO	40	14	9	3
4137	23618	MWIL	04	08	1630	S10	W08	04	8.1	4	(B)					
4137		PALE	04	08	1806	S10	W09	04	8.1		B	DSO	90	26	9	4
4137		HOLL	04	08	2021	S09	W11	04	8.0		B	DAO	90	26	10	2
4137		MANI	04	08	2333	S10	W12	04	8.1			DSO	140	24	10	3
4137		LEAR	04	09	0120	S10	W14	04	8.0		B	DRO	60	25	10	3
4137		ATHN	04	09	0800	S12	W18	04	8.0			DKO	190	18	9	3
4137		RAMY	04	09	1148	S10	W20	04	8.0		B	DAO	80	22	10	4
4137		HOLL	04	09	1440	S09	W22	04	8.0		BG	DAI	150	16	10	3
4137	23618	MWIL	04	09	1630	S10	W23	04	8.0	4	(B)					
4137		PALE	04	09	1835	S10	W23	04	8.0		BG	ESO	90	19	11	3
4137		LEAR	04	10	0115	S11	W27	04	8.0		B	ERO	90	14	11	2
4137		MANI	04	10	0136	S10	W27	04	8.0			ESO	140	19	11	3
4137		ATHN	04	10	0725	S08	W33	04	7.8			DHO	100	7	7	3
4137		RAMY	04	10	1200	S09	W33	04	8.0		B	EAO	120	25	12	4
4137		BOUL	04	10	1705	S08	W37	04	7.9		B	BXO	30	7	5	2
4137		PALE	04	10	1805	S10	W38	04	7.9		B	CRO	90	19	12	4
4137		MANI	04	11	0015	S11	W41	04	7.9			CRO	180	18	12	3
4137		LEAR	04	11	0020	S10	W40	04	8.0		B	BXO	70	14	13	3
4137		ATHN	04	11	0630	S08	W48	04	7.7			CAO	50	5	9	3
4137		HOLL	04	11	1458	S10	W48	04	8.0		B	BXO	40	6	12	2
4137		PALE	04	11	1808	S09	W51	04	7.9		B	BXO	40	8	12	4
4137		MANI	04	11	2253	S09	W54	04	7.9			CRO	50	13	12	3
4137		MANI	04	12	0001	S09	W54	04	7.9		B	CRO	50	13	12	3
4137		LEAR	04	12	0630	S10	W59	04	7.8		B	BXO	10	6	10	2
4137		ATHN	04	12	0700	S09	W56	04	8.1			AXX	20	1	1	3
4137		HOLL	04	12	1443	S10	W60	04	8.1		B	BXO	10	8	10	3
4137	23618	MWIL	04	12	1630	S10	W63	04	8.0	3	(AP)					
4137		LEAR	04	13	0018	S09	W66	04	8.1		B	BXO	20	7	6	3
4137		MANI	04	13	0120	S09	W67	04	8.0			BXO	60	11	11	3
4137	23618	MWIL	04	13	1645	S10	W72	04	8.3	2	(AP)					

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo Day (UT)	Lat CMD	CMP Mo Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4137		PALE	04 13 1730	S10 W74	04 8.2		B	BXO	20	2	3	3
4135		HOLL	04 02 1605	S12 E79	04 8.6		B	CAO	40	3	5	3
4135		PALE	04 02 1753	S12 E77	04 8.6		B	CSO	30	4	5	3
4135	23617	MWIL	04 02 1815	S11 E79	04 8.7	3	(AP)					
4135		LEAR	04 03 0110	S12 E75	04 8.7		B	CSO	40	3	6	3
4135		ATHN	04 03 0850	S12 E69	04 8.6		B	CSO	70	3	3	3
4135		RAMY	04 03 1150	S12 E65	04 8.4		B	DAO	120	8	9	3
4135		HOLL	04 03 1520	S11 E65	04 8.5		B	CSO	50	9	8	3
4135	23617	MWIL	04 03 1530	S11 E68	04 8.8	3	(AP)					
4135		PALE	04 03 1805	S11 E64	04 8.6		B	CSO	80	9	9	4
4135		MANI	04 03 2357	S11 E62	04 8.7			CSO	150	8	5	3
4135		LEAR	04 04 0100	S11 E58	04 8.4		B	DSO	50	8	10	3
4135		RAMY	04 04 1130	S12 E52	04 8.4		B	EAO	130	8	11	3
4135	23617	MWIL	04 04 1600	S11 E53	04 8.7	4	(BF)					
4135		PALE	04 04 1810	S11 E49	04 8.4		B	ERO	90	11	12	3
4135		MANI	04 05 0003	S11 E48	04 8.6			EAO	170	12	7	3
4135		LEAR	04 05 0031	S11 E49	04 8.7		B	DAO	70	8	5	3
4135		ATHN	04 05 0630	S13 E47	04 8.8			CRO	40	5	5	2
4135		RAMY	04 05 1231	S12 E42	04 8.7		B	DAO	110	7	6	3
4135	23617	MWIL	04 05 1630	S12 E40	04 8.7	3	(B)					
4135		PALE	04 05 1840	S12 E39	04 8.7		B	DRI	80	11	6	3
4135		LEAR	04 06 0020	S12 E36	04 8.7		B	DAO	80	19	5	3
4135		ATHN	04 06 0605	S11 E25	04 8.1			DSO	70	6	8	2
4135		RAMY	04 06 1157	S13 E29	04 8.7		B	DSO	90	7	5	3
4135		BOUL	04 06 1525	S10 E26	04 8.6		B	BXO	20	6	4	3
4135	23617	MWIL	04 06 1530	S12 E26	04 8.6	3	(B)					
4135		PALE	04 06 1824	S13 E25	04 8.7		B	BXO	20	7	5	4
4135		MANI	04 07 0006	S13 E22	04 8.7			CRO	30	7	5	3
4135		LEAR	04 07 0042	S12 E21	04 8.6		B	BXO	20	5	5	3
4135		ATHN	04 07 0600	S12 E18	04 8.6			CRO	20	7	4	3
4135		RAMY	04 07 1205	S12 E14	04 8.6		B	BXO	10	5	3	3
4135		MANI	04 07 2321	S12 E10	04 8.7			BXO	10	6	5	3
4135		RAMY	04 08 1125	S13 E06	04 8.9		B	BXO	10	5	2	3
4135		BOUL	04 08 1455	S11 E02	04 8.8		B	BXO	10	3	3	3
4135		PALE	04 08 1806	S12 E02	04 8.9		A	AXX		1		4
4135		HOLL	04 08 2021	S12 W01	04 8.8		B	BXO	10	2	3	2
4135		MANI	04 08 2333	S12 W02	04 8.8			BXO	10	4	4	3
4135		LEAR	04 09 0120	S13 W04	04 8.8		B	BXO		2	3	3
4135		RAMY	04 09 1148	S12 W09	04 8.8		A	AXX	10	3	2	4
4135		HOLL	04 09 1440	S12 W11	04 8.8		A	AXX	10	2	2	3
4135		PALE	04 09 1835	S12 W13	04 8.8		B	BXO	20	4	3	3
4135		LEAR	04 10 0115	S13 W17	04 8.8		A	AXX	10	2	1	2
4135		MANI	04 10 0136	S13 W17	04 8.8			BXO	10	3	2	3
4135		ATHN	04 10 0725	S10 W26	04 8.4			DHO	50	3	3	3
4135		BOUL	04 10 1705	S10 W30	04 8.5		B	CSO	50	7	2	2
4135		ATHN	04 11 0630	S09 W38	04 8.4			CSO	30	3	2	3
4138		RAMY	04 05 1231	S15 E78	04 11.4		B	BXO	30	3	3	3
4138	23620	MWIL	04 05 1630	S15 E75	04 11.4	2	(AP)					
4138		PALE	04 05 1840	S15 E74	04 11.4		B	BXO	20	2	1	3
4138		LEAR	04 06 0020	S15 E72	04 11.5		B	CRO	20	3	4	3
4138		RAMY	04 06 1157	S15 E63	04 11.3		B	BXO	10	3	3	3
4138		BOUL	04 06 1525	S13 E60	04 11.2		A	AXX	10	2	1	3
4138	23620	MWIL	04 06 1530	S15 E60	04 11.2	2	(AP)					
4138		PALE	04 06 1824	S16 E62	04 11.5		B	BXO	30	9	5	4
4138		MANI	04 07 0006	S15 E59	04 11.5			BXO	40	7	5	3
4138		LEAR	04 07 0042	S14 E58	04 11.4		B	BXO	30	14	5	3
4138		ATHN	04 07 0600	S15 E52	04 11.2			DSO	50	10	8	3
4138		RAMY	04 07 1205	S16 E52	04 11.5		B	DAO	100	16	7	3
4138		BOUL	04 07 1520	S16 E49	04 11.4		B	CSO	110	13	6	3
4138	23620	MWIL	04 07 1630	S15 E49	04 11.4	4	(B)					
4138		MANI	04 07 2321	S15 E46	04 11.5			CSO	180	13	6	3
4138		ATHN	04 08 0710	S16 E39	04 11.3			DAO	150	10	8	3
4138		RAMY	04 08 1125	S16 E38	04 11.4		B	DAO	170	22	7	3
4138		BOUL	04 08 1455	S15 E35	04 11.3		B	DAI	180	20	8	3
4138	23620	MWIL	04 08 1630	S15 E35	04 11.3	5	(B)					
4138		PALE	04 08 1806	S15 E34	04 11.3		B	DKI	180	19	8	4
4138		HOLL	04 08 2021	S16 E33	04 11.4		B	DKO	230	18	7	2
4138		MANI	04 08 2333	S15 E31	04 11.3			DKI	310	20	7	3
4138		LEAR	04 09 0120	S16 E30	04 11.3		B	DAO	150	29	7	3

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4138		ATHN	04	09	0800	S18	E29	04	11.5			DKO	260	10	10	3
4138		RAMY	04	09	1148	S17	E25	04	11.4		BG	DKO	200	23	8	4
4138		HOLL	04	09	1440	S15	E22	04	11.3		B	DAO	220	19	8	3
4138	23620	MWIL	04	09	1630	S16	E21	04	11.3	5	(B)					
4138		PALE	04	09	1835	S16	E21	04	11.4		B	DSO	200	20	8	3
4138		LEAR	04	10	0115	S17	E18	04	11.4		B	DSO	220	23	8	2
4138		MANI	04	10	0136	S16	E17	04	11.4			DAO	270	25	8	3
4138		ATHN	04	10	0725	S18	E13	04	11.3			DKO	250	14	7	3
4138		RAMY	04	10	1200	S16	E10	04	11.3		BG	DKO	190	31	9	4
4138		BOUL	04	10	1705	S15	E07	04	11.2		B	DSO	150	18	8	2
4138		PALE	04	10	1805	S17	E07	04	11.3		B	DAO	200	23	8	4
4138		MANI	04	11	0015	S17	E04	04	11.3			DSI	240	22	7	3
4138		LEAR	04	11	0020	S16	E05	04	11.4		B	DSO	200	21	8	3
4138		ATHN	04	11	0630	S17	E03	04	11.5			DAO	140	16	9	3
4138		HOLL	04	11	1458	S16	W05	04	11.2		B	DSO	170	11	7	2
4138		PALE	04	11	1808	S16	W06	04	11.3		BG	DSO	150	13	6	4
4138		MANI	04	11	2253	S16	W08	04	11.3			DSO	240	14	9	3
4138		MANI	04	12	0001	S16	W08	04	11.4		B	DSO	240	14	9	3
4138		LEAR	04	12	0630	S15	W14	04	11.2		B	CSO	110	16	6	2
4138		ATHN	04	12	0700	S17	W12	04	11.4			DAO	110	3	6	3
4138		HOLL	04	12	1443	S16	W17	04	11.3		B	DAO	130	9	7	3
4138	23620	MWIL	04	12	1630	S17	W18	04	11.3	5	(B)					
4138		LEAR	04	13	0018	S16	W23	04	11.3		B	CSO	100	11	9	3
4138		MANI	04	13	0120	S16	W23	04	11.3			CSO	170	13	8	3
4138		ATHN	04	13	0930	S18	W28	04	11.3			DHO	120	5	5	3
4138	23620	MWIL	04	13	1645	S17	W32	04	11.3	4	(B)					
4138		PALE	04	13	1730	S16	W33	04	11.2		B	DAO	80	9	4	3
4138		MANI	04	13	2339	S16	W36	04	11.3			CSO	120	8	8	3
4138	23620	MWIL	04	14	1630	S17	W45	04	11.3	4	(BP)					
4138	23620	MWIL	04	15	1630	S16	W59	04	11.2	3	(AP)					
4138	23620	MWIL	04	16	1645	S16	W73	04	11.2	3	(AP)					
4140		RAMY	04	06	1157	S08	E83	04	12.7		A	HHX	40	1	5	3
4140		BOUL	04	06	1525	S07	E79	04	12.6		A	HSX	50	1	2	3
4140	23622	MWIL	04	06	1530	S08	E79	04	12.6	3	(AP)					
4140		PALE	04	06	1824	S09	E79	04	12.7		A	HSX	40	1	1	4
4140		MANI	04	07	0006	S09	E76	04	12.7			HSX	140	1	2	3
4140		LEAR	04	07	0042	S08	E76	04	12.7		A	HSO	50	2	2	3
4140		ATHN	04	07	0600	S08	E71	04	12.6			HRX	40	1	1	3
4140		RAMY	04	07	1205	S08	E68	04	12.6		A	HAX	50	1	1	3
4140		BOUL	04	07	1520	S08	E67	04	12.7		A	HSX	30	1	1	3
4140	23622	MWIL	04	07	1630	S08	E66	04	12.6	4	(AP)					
4140		MANI	04	07	2321	S08	E63	04	12.7			HSX	90	2	2	3
4140		ATHN	04	08	0710	S10	E48	J4	11.9			HRX	40	1	1	3
4140		RAMY	04	08	1125	S08	E55	04	12.6		A	HAX	40	2	1	3
4140		BOUL	04	08	1455	S09	E52	04	12.5		A	HSX	30	3	1	3
4140	23622	MWIL	04	08	1630	S08	E51	04	12.5	4	(AP)					
4140		PALE	04	08	1806	S08	E51	04	12.6		A	HSX	50	2	2	4
4140		HOLL	04	08	2021	S08	E50	04	12.6		A	HAX	40	2	2	2
4140		MANI	04	08	2333	S08	E48	04	12.6			HSX	70	2	2	3
4140		LEAR	04	09	0120	S08	E47	04	12.6		A	HSO	20	2	1	3
4140		ATHN	04	09	0800	S08	E42	04	12.5			HHX	50	1	2	3
4140		RAMY	04	09	1148	S09	E40	04	12.5		B	CSO	30	3	3	4
4140		HOLL	04	09	1440	S08	E39	04	12.5		B	CAO	40	7	5	3
4140	23622	MWIL	04	09	1630	S08	E38	04	12.5	4	(AP)					
4140		PALE	04	09	1835	S09	E37	04	12.6		B	CSO	30	3	3	3
4140		LEAR	04	10	0115	S08	E34	04	12.6		A	HSX	20	2	1	2
4140		MANI	04	10	0136	S08	E34	04	12.6			CSO	50	2	2	3
4140		ATHN	04	10	0725	S09	E30	04	12.6			CHO	40	2	2	3
4140		RAMY	04	10	1200	S08	E27	04	12.5		A	HAX	20	3	2	4
4140		BOUL	04	10	1705	S10	E25	04	12.6		B	CSO	20	6	3	2
4140		PALE	04	10	1805	S11	E25	04	12.6		B	CRO	40	10	5	4
4140		MANI	04	11	0015	S10	E22	04	12.7			CAO	60	7	4	3
4140		LEAR	04	11	0020	S08	E20	04	12.5		A	HSX	10	1	1	3
4140		ATHN	04	11	0630	S11	E19	04	12.7			CRO	30	3	5	3
4140		HOLL	04	11	1458	S08	E12	04	12.5		A	AXX		1	1	2
4140		PALE	04	11	1808	S08	E10	04	12.5		A	HRX	20	1	1	4
4140		MANI	04	11	2253	S08	E08	04	12.6			HRX	30	1	1	3
4140		MANI	04	12	0001	S08	E08	04	12.6		A	HRX	30	1	1	3
4140		LEAR	04	12	0630	S08	E03	04	12.5		A	AXX	10	1	1	2
4140		ATHN	04	12	0700	S08	E04	04	12.6			AXX	10	1	1	3

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4140		HOLL	04	12	1443	S07	W02	04	12.5		A	HRX	30	2	2	3
4140	23622	MWIL	04	12	1630	S08	W03	04	12.5	4	(AP)					
4140		LEAR	04	13	0018	S07	W08	04	12.4		A	HSX	20	1	2	3
4140		MANI	04	13	0120	S08	W07	04	12.5			HRX	30	1	1	3
4140		ATHN	04	13	0930	S08	W13	04	12.4			HSX	20	1	2	3
4140	23622	MWIL	04	13	1645	S08	W16	04	12.5	3	(AP)					
4140		PALE	04	13	1730	S07	W17	04	12.5		A	AXX		1		3
4140	23622	MWIL	04	14	1630	S08	W29	04	12.5	3	(AP)					
4140	23622	MWIL	04	15	1630	S08	W42	04	12.5	3	(AP)					
4143		LEAR	04	11	0020	S13	E23	04	12.8		B	BXO	10	3	3	3
4143		HOLL	04	11	1458	S12	E13	04	12.6		B	CRO	20	3	4	2
4143		PALE	04	11	1808	S13	E13	04	12.7		B	CRO	20	4	4	4
4143		MANI	04	11	2253	S13	E10	04	12.7			CRO	40	5	4	3
4143		MANI	04	12	0001	S13	E10	04	12.8		B	CRO	40	5	4	3
4143		LEAR	04	12	0630	S13	E06	04	12.7		B	BXO	20	8	4	2
4143		ATHN	04	12	0700	S12	E06	04	12.7			BRO	30	2	4	3
4143		HOLL	04	12	1443	S12	W00	04	12.6		B	CRO	10	7	7	3
4143	23623	MWIL	04	12	1630	S12	W01	04	12.6	4	(B)					
4143		LEAR	04	13	0018	S12	W05	04	12.6		B	CSO	30	5	5	3
4143		MANI	04	13	0120	S13	W05	04	12.7			CRO	20	5	5	3
4143		ATHN	04	13	0930	S13	W08	04	12.8			HSX	20	1	2	3
4143		PALE	04	13	1730	S13	W13	04	12.7		A	AXX		1		3
4143	23627	MWIL	04	15	1630	S14	W40	04	12.7	3	(AF)					
4148	23628	MWIL	04	15	1630	S30	W11	04	14.8	3	(AP)					
4148	23628	MWIL	04	16	1645	S30	W24	04	14.8	4	(BP)					
4148	23628	MWIL	04	17	1600	S30	W37	04	14.8	5	(BY)					
4148		LEAR	04	19	0545	S30	W57	04	14.8		BG	DKI	340	17	6	2
4148		ATHN	04	19	0615	S32	W55	04	14.9			DKI	410	15	6	3
4148		HOLL	04	19	1434	S29	W63	04	14.7		BGD	DKI	730	21	7	2
4148		BOUL	04	19	1540	S27	W58	04	15.1		BGD	DKI	560	10	6	3
4148		PALE	04	19	1820	S30	W64	04	14.7		BGD	DKI	640	17	7	3
4148		MANI	04	20	0029	S30	W66	04	14.8			DKC	1120	13	7	3
4148		LEAR	04	20	0100	S31	W66	04	14.8		BGD	DKC	420	20	7	3
4148		ATHN	04	20	0800	S32	W70	04	14.8		BG	DKI	550	8	6	3
4148		BOUL	04	20	1430	S28	W72	04	15.0		BGD	DKI	750	12	9	2
4148		HOLL	04	20	1501	S30	W75	04	14.7		BGD	DKI	710	19	10	2
4148		PALE	04	20	1910	S29	W75	04	14.9		BGD	DKI	680	11	9	3
4148		LEAR	04	21	0130	S30	W80	04	14.8		BGD	DKI	350	10	8	3
4148		MANI	04	21	0333	S30	W80	04	14.9			DKC	1170	6	8	3
4148		ATHN	04	21	0730	S29	W83	04	14.8			HHO	500	1	4	2
4148		RAMY	04	21	1155	S29	W85	04	14.8		BGD	DKO	70	9	7	3
4148		HOLL	04	21	1448	S29	W85	04	15.0		BGD	DKI	240	4	10	4
4148		PALE	04	21	1825	S30	W85	04	15.1		BGD	DKI	250	4	5	3
0002	23624	MWIL	04	12	1630	S08	E52	04	16.6	4	(B)					
0002	23624	MWIL	04	13	1645	S08	E36	04	16.4	4	(BP)					
0002	23624	MWIL	04	14	1630	S08	E23	04	16.4	4	(BP)					
0002	23624	MWIL	04	15	1630	S08	E08	04	16.3	4	(BP)					
0002	23624	MWIL	04	16	1645	S08	W07	04	16.2	4	(AP)					
4145		RAMY	04	10	1200	S07	E80	04	16.5		A	HAX	20	1	1	4
4145	23626	MWIL	04	13	1645	S07	E42	04	16.8	3	(AP)					
4145	23626	MWIL	04	14	1630	S08	E28	04	16.8	4	(B)					
4145	23626	MWIL	04	15	1630	S09	E16	04	16.9	3	(BP)					
4145	23626	MWIL	04	16	1645	S08	W02	04	16.5	3	(AP)					
4145	23626	MWIL	04	17	1600	S07	W11	04	16.8	4	(B)					
4145		LEAR	04	19	0545	S08	W33	04	16.8		B	DAO	50	8	5	2
4145		ATHN	04	19	0615	S07	W32	04	16.9			DAO	70	6	6	3
4145		HOLL	04	19	1434	S07	W37	04	16.8		B	CSO	50	4	6	2
4145		BOUL	04	19	1540	S07	W36	04	17.0		B	DSO	40	2	6	3
4145		PALE	04	19	1820	S07	W39	04	16.8		B	DRO	30	2	6	3
4145		MANI	04	20	0029	S07	W43	04	16.8			DRO	80	3	6	3
4145		LEAR	04	20	0100	S07	W43	04	16.8		B	CSO	20	3	6	3
4145		ATHN	04	20	0800	S08	W46	04	16.9		B	DSO	30	2	6	3
4145		BOUL	04	20	1430	S06	W50	04	16.9		B	DSO	30	2	5	2
4145		HOLL	04	20	1501	S07	W52	04	16.7		B	CSO	20	3	6	2
4145		PALE	04	20	1910	S07	W54	04	16.8		B	CSO	20	3	7	3
4145		LEAR	04	21	0130	S07	W56	04	16.9		B	CRO	10	3	6	3
4145		MANI	04	21	0333	S07	W59	04	16.7			DRO	40	3	6	3

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4145		RAMY	04	21	1155	S07	W61	04	16.9		B	CAO	40	3	3	3
4145		HOLL	04	21	1448	S07	W61	04	17.0		A	AXX	10	1		4
4145		PALE	04	21	1825	S08	W63	04	17.0		B	BXO	10	2	3	3
0003		LEAR	04	11	0020	S15	E75	04	16.7		A	HSX	30	1	1	3
0003		ATHN	04	11	0630	S13	E72	04	16.7			CSO	60	2	2	3
4142		BOUL	04	10	1705	S04	E78	04	16.5		A	HSX	60	1	2	2
4142		PALE	04	10	1805	S07	E77	04	16.5		A	HSX	20	1	1	4
4142		MANI	04	11	0015	S07	E74	04	16.6			HSX	70	2	1	3
4142		HOLL	04	11	1458	S07	E64	04	16.4		B	DSO	50	3	5	2
4142		PALE	04	11	1808	S07	E63	04	16.5		B	DSO	70	4	4	4
4142		MANI	04	11	2253	S09	E60	04	16.5			DSO	110	4	4	3
4142		LEAR	04	12	0630	S08	E55	04	16.4		B	DSO	30	3	4	2
4142		LEAR	04	12	0630	S08	E60	04	16.8		A	AXX		1	1	2
4142		ATHN	04	12	0700	S08	E59	04	16.7			DRO	50	2	4	3
4142		HOLL	04	12	1443	S07	E53	04	16.6		B	DSO	60	4	5	3
4142		LEAR	04	13	0018	S08	E47	04	16.5		B	DSO	70	10	7	3
4142		MANI	04	13	0120	S09	E8	04	16.7			DAO	90	7	7	3
4142		ATHN	04	13	0930	S08	E40	04	16.4			DHO	110	3	4	3
4142		PALE	04	13	1730	S07	E39	04	16.7		BG	DAO	80	13	10	3
4149	23630	MWIL	04	16	1645	S11	E14	04	17.8	3	(AP)					
4149	23630	MWIL	04	17	1600	S11	E02	04	17.8	4	(B)					
4149		LEAR	04	19	0545	S11	W19	04	17.8		B	CRO	10	5	9	2
4149		ATHN	04	19	0615	S11	W22	04	17.6			CRO	20	2	2	3
4149		HOLL	04	19	1434	S11	W27	04	17.6		A	AXX		1		2
4149		ATHN	04	20	0800	S11	W35	04	17.7		A	AXX		1	1	3
4149		BOUL	04	20	1430	S08	W41	04	17.5		A	HRX	10	1	1	2
4149		PALE	04	20	1910	S09	W42	04	17.6		B	BXO	30	4	3	3
4149		LEAR	04	21	0130	S10	W47	04	17.5		B	BXO	10	3	3	3
4149		MANI	04	21	0333	S10	W48	04	17.5			CRO	40	3	4	3
4149		RAMY	04	21	1155	S11	W52	04	17.6		B	DAO	70	3	3	3
4149		HOLL	04	21	1448	S11	W54	04	17.6		B	BXO	20	4	3	4
4149		PALE	04	21	1825	S10	W55	04	17.6		B	BXO	10	2	3	3
4149		LEAR	04	22	0330	S10	W60	04	17.6		A	AXX		1	1	2
4149	23630	MWIL	04	22	1515	S11	W67	04	17.6	2	(AP)					
		HOLL	04	20	1501	S09	W34	04	18.1		A	AXX		0		2
4144		LEAR	04	12	0630	N20	E74	04	17.9		A	AXX		1	1	2
4144		HOLL	04	12	1443	N22	E71	04	18.1		A	AXX		1		3
4144	23625	MWIL	04	12	1630	N20	E70	04	18.0	3	(AP)					
4144		LEAR	04	13	0018	N23	E67	04	18.2		B	CSO	30	4	3	3
4144		MANI	04	13	0120	N22	E67	04	18.2			CSO	60	3	3	3
4144		ATHN	04	13	0930	N21	E60	04	18.0			HKX	90	1	3	3
4144	23625	MWIL	04	13	1645	N20	E57	04	18.1	3	(AP)					
4144		PALE	04	13	1730	N21	E57	04	18.1		B	CRO	30	2	3	3
4144	23625	MWIL	04	14	1630	N20	E43	04	18.0	3	(AP)					
4144	23631A	MWIL	04	17	1600	N22	E06	04	18.1	3	(B)					
		ATHN	04	24	0845	S08	W80	04	18.4			CKO	210	2	9	1
4153		LEAR	04	19	0545	S09	W02	04	19.1		B	BXO	10	3	2	2
4153		ATHN	04	19	0615	S10	W02	04	19.1			BXO	10	2	2	3
4153		BOUL	04	19	1540	S09	W06	04	19.2		A	HRX	10	1	1	3
4153		PALE	04	19	1820	S08	W07	04	19.2		A	HRX	10	1	1	3
4153		MANI	04	20	0029	S09	W11	04	19.2			HRX	10	1	1	3
4153		LEAR	04	20	0100	S09	W11	04	19.2		A	AXX	10	1	1	3
4153		RAMY	04	23	1146	S07	W54	04	19.4		B	BXO	20	2	3	3
4153	23639	MWIL	04	23	1600	S08	W58	04	19.3	3	(B)					
4153		HOLL	04	23	1634	S08	W58	04	19.3		B	BXO	10	3	3	3
4153		PALE	04	23	1755	S08	W59	04	19.3		B	BXO	20	3	3	4
4153		LEAR	04	24	0036	S08	W62	04	19.4		B	BXO		2	4	2
4153		MANI	04	24	0123	S09	W62	04	19.4			BXO	20	2	3	3
4153		HOLL	04	24	1434	S08	W06	04	19.2		B	CRO	10	2	3	2
		ATHN	04	24	0845	S21	W61	04	19.7			CKO	220	4	10	1
		ATHN	04	24	0845	S18	W52	04	20.4			DHO	180	6	10	1
4146	23629	MWIL	04	15	1630	N07	E69	04	20.9	4	(B)					

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4146	23629	MWIL	04	16	1645	N07	E55	04	20.8	4	(B)					
4146	23629	MWIL	04	17	1600	N07	E41	04	20.7	4	(B)					
4146		LEAR	04	19	0545	N08	E20	04	20.7		B	CRO	20	8	10	2
4146		ATHN	04	19	0615	N05	E16	04	20.5			DSO	40	7	4	3
4146		HOLL	04	19	1434	N07	E11	04	20.4		B	BXO	20	5	4	2
4146		BOUL	04	19	1540	N10	E12	04	20.6		B	BXO	10	6	3	3
4146		PALE	04	19	1820	N07	E09	04	20.4		B	CRO	30	10	4	3
4146		MANI	04	20	0029	N08	E06	04	20.5			CRO	50	6	5	3
4146		LEAR	04	20	0100	N07	E06	04	20.5		B	CRO	20	10	3	3
4146		ATHN	04	20	0800	N06	E03	04	20.6		B	DSO	30	2	3	3
4146		BOUL	04	20	1430	N08	W03	04	20.4		B	CSO	20	2	3	2
4146		HOLL	04	20	1501	N08	W04	04	20.3		B	BXO	10	4	3	2
4146		PALE	04	20	1910	N08	W05	04	20.4		B	BXO	10	2	2	3
4146		LEAR	04	21	0130	N08	W08	04	20.5		B	BXO	10	5	5	3
4146		MANI	04	21	0333	N08	W10	04	20.4			BXO	10	5	5	3
4146		RAMY	04	21	1155	N07	W14	04	20.4		B	BXO	10	5	4	3
4146		HOLL	04	21	1448	N07	W15	04	20.5		B	BXO	10	3	4	4
4146		PALE	04	21	1825	N07	W17	04	20.5		B	BXO	20	6	4	3
4146		LEAR	04	22	0330	N08	W23	04	20.4		B	BXO	20	4	3	2
4146	23629	MWIL	04	22	1515	N07	W29	04	20.5	3	(B)					
4146		HOLL	04	22	1537	N08	W30	04	20.4		B	BXO	10	7	4	3
4146		MANI	04	23	0032	N08	W35	04	20.4			CRO	20	6	5	3
4146		LEAR	04	23	0157	N08	W35	04	20.5		B	BXO	20	5	6	3
4146		ATHN	04	23	0630	N08	W38	04	20.4			BXO	20	2	4	2
4146		RAMY	04	23	1146	N08	W40	04	20.5		B	BXO	40	5	5	3
4146		HOLL	04	23	1634	N07	W43	04	20.5		B	BXO	20	3	4	3
4146		PALE	04	23	1755	N08	W45	04	20.4		A	AXX	10	1		4
4146		RAMY	04	24	1130	N08	W54	04	20.4		A	AXX	10	1	1	3
4146		HOLL	04	24	1452	N08	W57	04	20.3		A	AXX		1		3
4146		MANI	04	25	0058	N08	W62	04	20.4			AXX	10	1	1	3
0004		HOLL	04	19	1434	N08	E18	04	21.0		B	BXO	10	3	3	2
0004		BOUL	04	19	1540	N10	E21	04	21.2		A	AXX		1		3
0004		HOLL	04	20	1501	N07	E06	04	21.1		A	AXX		2	2	2
0004		HOLL	04	21	1448	N07	W07	04	21.1		A	AXX		1		4
0004	23631B	MWIL	04	22	1515	N08	W20	04	21.1	2	(AF)					
0004		PALE	04	23	1755	N08	W34	04	21.2		A	AXX		1		4
4151		LEAR	04	19	0545	N11	E38	04	22.1		B	BXO	20	5	5	2
4151		ATHN	04	19	0615	N12	E37	04	22.0			CAO	20	6	5	3
4151		HOLL	04	19	1434	N11	E32	04	22.0		B	CSO	40	9	7	2
4151		BOUL	04	19	1540	N12	E32	04	22.1		B	CSO	20	8	6	3
4151		PALE	04	19	1820	N11	E30	04	22.0		B	CSO	30	7	6	3
4151		MANI	04	20	0029	N11	E26	04	22.0			CSO	90	5	7	3
4151		LEAR	04	20	0100	N11	E25	04	21.9		B	CSO	40	7	5	3
4151		ATHN	04	20	0800	N09	E23	04	22.1		B	CSO	30	3	5	3
4151		BOUL	04	20	1430	N11	E18	04	22.0		B	DSO	40	4	8	2
4151		HOLL	04	20	1501	N11	E17	04	21.9		B	CSO	30	8	7	2
4151		PALE	04	20	1910	N11	E16	04	22.0		B	CSO	50	9	8	3
4151		LEAR	04	21	0130	N11	E11	04	21.9		B	CRO	40	12	8	3
4151		MANI	04	21	0333	N11	E10	04	21.9			CSO	50	8	7	3
4151		ATHN	04	21	0730	N09	E09	04	22.0			CRO	30	4	7	2
4151		RAMY	04	21	1155	N11	E05	04	21.9		B	DAO	100	11	8	3
4151		HOLL	04	21	1448	N11	E03	04	21.8		B	BXO	40	10	8	4
4151		PALE	04	21	1825	N11	E01	04	21.8		B	CSO	40	8	7	3
4151		LEAR	04	22	0330	N12	W05	04	21.8		B	CSO	50	9	8	2
4151	23632	MWIL	04	22	1515	N11	W11	04	21.8	3	(B)					
4151		HOLL	04	22	1537	N11	W12	04	21.7		B	DRO	30	16	7	3
4151		MANI	04	23	0032	N11	W16	04	21.8			CSO	70	17	8	3
4151		LEAR	04	23	0157	N11	W17	04	21.8		B	BXO	50	12	8	3
4151		ATHN	04	23	0630	N10	W21	04	21.7			DAO	60	13	8	2
4151		RAMY	04	23	1146	N11	W23	04	21.8		B	CAO	90	16	8	3
4151	23632	MWIL	04	23	1600	N11	W25	04	21.8	4	(B)					
4151		BOUL	04	23	1615	N11	W24	04	21.9		B	CAO	80	12	7	3
4151		HOLL	04	23	1634	N11	W26	04	21.7		B	CAO	90	15	8	3
4151		PALE	04	23	1755	N11	W27	04	21.7		B	DAO	100	15	8	4
4151		LEAR	04	24	0036	N11	W29	04	21.8		B	CAO	150	7	8	2
4151		MANI	04	24	0123	N11	W31	04	21.7			CSO	60	4	8	3
4151		ATHN	04	24	0845	N13	W33	04	21.9			DHO	140	10	9	1
4151		RAMY	04	24	1130	N11	W38	04	21.6		B	CAO	90	11	9	3
4151		HOLL	04	24	1452	N11	W39	04	21.7		B	CSO	70	17	9	3

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4151		BOUL	04	24	1620	N12	W37	04	21.9		B	CAO	120	12	8	3
4151		PALE	04	24	2107	N11	W43	04	21.6		B	CAO	120	13	7	2
4151		LEAR	04	25	0130	N11	W45	04	21.7		B	DAO	100	10	8	3
4151		ATHN	04	25	1200	N10	W53	04	21.5			CAO	70	3	5	2
4151		RAMY	04	25	1330	N12	W51	04	21.7		B	DAO	170	17	8	4
4151		HOLL	04	25	1426	N10	W53	04	21.6		B	DSO	190	11	8	3
4151		BOUL	04	25	1530	N11	W52	04	21.7		B	DAO	80	6	6	3
4151	23632	MWIL	04	25	1545	N11	W54	04	21.6	4	(B)					
4151		MANI	04	25	2257	N11	W58	04	21.6			DAO	220	9	8	3
4151		LEAR	04	26	0130	N11	W60	04	21.5		B	DSO	170	8	7	2
4151		ATHN	04	26	0615	N12	W64	04	21.4			HSX	140	1	2	3
4151		HOLL	04	26	1423	N10	W67	04	21.6		B	DSO	200	10	6	3
4151		BOUL	04	26	1440	N12	W68	04	21.5		B	CSO	160	5	7	2
4151		ATHN	04	27	0915	N12	W80	04	21.4			AXX	120	1	2	3
4151		RAMY	04	27	1145	N12	W80	04	21.5		A	HAX	60	1	2	4
4151		HOLL	04	27	1453	N08	W86	04	21.2		B	HSX	60	1	2	3
4151	23632	MWIL	04	27	1545	N11	W85	04	21.3	3	(AP)					
4152		BOUL	03	21	1610	S22	E12	03	22.6		A	AXX		2	1	3
4152		LEAR	03	22	0016	S24	E10	03	22.8		A	AXX		1		3
4152		LEAR	04	19	0545	S23	E48	04	22.9		B	CRO	40	8	3	2
4152		ATHN	04	19	0615	S22	E48	04	23.0			BXO	10	2	2	3
4152		HOLL	04	19	1434	S22	E46	04	23.1		B	CSO	40	2	4	2
4152		BOUL	04	19	1540	S21	E43	04	23.0		B	CSO	30	3	4	3
4152		PALE	04	19	1820	S21	E41	04	22.9		A	HSX	20	1	1	3
4152		MANI	04	20	0029	S22	E39	04	23.0			CSO	50	3	5	3
4152		LEAR	04	20	0100	S23	E38	04	23.0		B	CAO	30	4	3	3
4152		ATHN	04	20	0800	S24	E34	04	23.0		A	HSX	30	1	1	3
4152		BOUL	04	20	1430	S21	E28	04	22.8		B	CSO	20	5	3	2
4152		HOLL	04	20	1501	S23	E31	04	23.0		B	CRO	30	5	5	2
4152		PALE	04	20	1910	S22	E30	04	23.1		B	CRO	30	8	5	3
4152		LEAR	04	21	0130	S23	E25	04	23.0		B	CRO	30	10	5	3
4152		MANI	04	21	0333	S22	E25	04	23.1			CSO	40	7	5	3
4152		ATHN	04	21	0730	S25	E22	04	23.0			DRO	40	3	6	2
4152		RAMY	04	21	1155	S23	E19	04	23.0		B	DAO	70	5	4	3
4152		HOLL	04	21	1448	S23	E18	04	23.0		B	BXO	10	3	5	4
4152		PALE	04	21	1825	S23	E16	04	23.0		B	BXO	20	5	4	3
4152		LEAR	04	22	0330	S23	E10	04	22.9		A	AXX		1	1	2
4152	23633	MWIL	04	22	1515	S24	E04	04	22.9	3	(AP)					
4152		HOLL	04	22	1537	S23	E03	04	22.9		A	AXX		3	2	3
4152		MANI	04	23	0032	S23	W01	04	22.9			AXX	10	1		3
4152		PALE	04	24	2107	S23	W27	04	22.8		A	AXX		1		2
4152		LEAR	04	25	0130	S23	W30	04	22.7		B	BXO	10	4	3	3
4152		RAMY	04	25	1330	S23	W38	04	22.6		B	BXO	10	2	2	4
		ATHN	04	24	0845	S13	W12	04	23.5			DKO	300	17	8	1
0005		LEAR	04	23	0157	S17	E11	04	23.9		A	AXX		1	1	3
0005		HOLL	04	25	1426	S17	W22	04	23.9		A	AXX		1		3
		HOLL	04	25	1426	N16	W14	04	24.5		A	AXX		1		3
4150		LEAR	04	19	0545	S11	E78	04	25.1		A	HHX	250	1	3	2
4150		ATHN	04	19	0615	S11	E78	04	25.1			HHX	210	1	3	3
4150		HOLL	04	19	1434	S09	E72	04	25.0		B	DHO	390	4	6	2
4150		BOUL	04	19	1540	S11	E70	04	24.9		B	DSO	120	3	3	3
4150		PALE	04	19	1820	S11	E71	04	25.1		B	DKO	180	5	4	3
4150		MANI	04	20	0029	S11	E70	04	25.3			DHO	370	6	6	3
4150		LEAR	04	20	0100	S12	E70	04	25.3		B	CKO	160	10	11	3
4150		ATHN	04	20	0800	S12	E64	04	25.2		B	DHO	230	5	4	3
4150		BOUL	04	20	1430	S12	E60	04	25.1		B	CSO	250	7	10	2
4150		HOLL	04	20	1501	S12	E63	04	25.4		BG	CSO	140	8	10	2
4150		PALE	04	20	1910	S12	E61	04	25.4		BG	CAO	200	8	12	3
4150		LEAR	04	21	0130	S11	E56	04	25.3		BG	CKO	250	10	8	3
4150		MANI	04	21	0333	S11	E56	04	25.4			CHO	600	9	10	3
4150		ATHN	04	21	0730	S14	E52	04	25.2			DKO	150	2	4	2
4150		RAMY	04	21	1155	S11	E48	04	25.1		BG	DKO	240	17	5	3
4150		HOLL	04	21	1448	S11	E46	04	25.1		B	CKI	320	8	8	4
4150		PALE	04	21	1825	S12	E45	04	25.2		B	CKO	340	6	3	3
4150		MANI	04	21	2335	S12	E42	04	25.1			CKO	540	6	4	3
4150		LEAR	04	22	0330	S11	E39	04	25.1		B	CHO	320	7	6	2

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4150	23634	MWIL	04 22 1515	S11 E33	04 25.1	4	(BF)					
4150		HOLL	04 22 1537	S11 E33	04 25.1		B	CKI	370	8	8	3
4150		MANI	04 23 0032	S11 E29	04 25.2			CKO	550	13	7	3
4150		LEAR	04 23 0157	S11 E30	04 25.3		B	CHO	380	15	7	3
4150		ATHN	04 23 0630	S12 E23	04 25.0			DKI	320	7	8	2
4150		RAMY	04 23 1146	S12 E25	04 25.4		BG	DKO	300	18	9	3
4150	23634	MWIL	04 23 1600	S11 E19	04 25.1	5	(BF)					
4150		BOUL	04 23 1615	S12 E21	04 25.3		BG	CKO	410	12	8	3
4150		HOLL	04 23 1634	S12 E22	04 25.3		BG	CKO	400	24	9	3
4150		PALE	04 23 1755	S12 E21	04 25.3		BG	CKO	370	25	9	4
4150		LEAR	04 24 0036	S12 E18	04 25.4		BG	DKO	530	25	10	2
4150		MANI	04 24 0123	S12 E17	04 25.3			DKO	600	19	8	3
4150		RAMY	04 24 1130	S13 E11	04 25.3		BG	DKO	340	21	9	3
4150		HOLL	04 24 1452	S12 E09	04 25.3		B	CKO	340	16	9	3
4150		BOUL	04 24 1620	S11 E10	04 25.4		BG	CKO	380	10	7	3
4150		PALE	04 24 2107	S13 E06	04 25.3		B	DKO	280	15	7	2
4150		MANI	04 25 0058	S12 E04	04 25.3			DKO	590	17	9	3
4150		LEAR	04 25 0130	S12 E04	04 25.4		BG	DKO	270	14	9	3
4150		ATHN	04 25 1200	S13 W06	04 25.0			CAO	80	4	30	2
4150		RAMY	04 25 1330	S13 W04	04 25.3		BG	DKO	320	26	10	4
4150		HOLL	04 25 1426	S12 W04	04 25.3		B	CKO	300	16	7	3
4150		BOUL	04 25 1530	S12 W06	04 25.2		B	CKO	200	11	8	3
4150	23634	MWIL	04 25 1545	S13 W06	04 25.2	5	(D)					
4150		MANI	04 25 2257	S13 W07	04 25.4			EKO	590	20	12	3
4150		LEAR	04 26 0130	S12 W13	04 25.1		B	DKO	270	20	8	2
4150		ATHN	04 26 0615	S12 W16	04 25.1			CKI	210	9	4	3
4150		HOLL	04 26 1423	S13 W16	04 25.4		B	CAO	260	19	8	3
4150		BOUL	04 26 1440	S11 W18	04 25.3		B	CAI	250	23	9	2
4150		ATHN	04 27 0915	S09 W30	04 25.1		GD	CAX	130	6	3	3
4150		RAMY	04 27 1145	S12 W32	04 25.1		B	CAO	160	10	4	4
4150		HOLL	04 27 1453	S11 W33	04 25.1		B	CHI	200	11	4	3
4150	23634	MWIL	04 27 1545	S12 W33	04 25.2	5	(BF)					
4150		BOUL	04 27 1610	S12 W33	04 25.2		B	CSI	120	9	4	3
4150		LEAR	04 28 0022	S11 W39	04 25.1		A	HHX	200	5	4	4
4150		MANI	04 28 0247	S11 W40	04 25.1			CHO	230	8	5	3
4150		RAMY	04 28 1340	S12 W46	04 25.1		B	CAO	150	5	3	3
4150		HOLL	04 28 1512	S11 W47	04 25.1		A	HAX	90	1	2	1
4150		BOUL	04 28 1545	S10 W45	04 25.3		A	HSX	90	1	2	3
4150		PALE	04 28 1910	S10 W49	04 25.1		A	HSX	100	1	2	3
4150		MANI	04 28 2330	S10 W51	04 25.1			HSX	170	1	2	3
4150		LEAR	04 29 0118	S11 W52	04 25.1		A	HSX	120	3	2	4
4150		ATHN	04 29 0900	S11 W55	04 25.2		A	HSX	70	1	2	2
4150		RAMY	04 29 1259	S11 W59	04 25.1		A	HSX	80	1	2	4
4150		BOUL	04 29 1625	S10 W59	04 25.2		A	HSX	70	2	2	3
4150		PALE	04 29 1810	S11 W61	04 25.2		A	HSX	90	1	2	3
4150		MANI	04 29 2342	S11 W65	04 25.1			HSX	120	1	2	3
4150		LEAR	04 30 0056	S12 W66	04 25.1		A	HSX	70	1	2	3
4150		ATHN	04 30 0700	S09 W68	04 25.2			HHX	190	1	3	2
4150		BOUL	04 30 1530	S11 W72	04 25.2		A	HSX	120	1	2	2
4150		HOLL	04 30 1530	S11 W73	04 25.1		A	HSX	60	1	2	3
4150		PALE	04 30 1811	S12 W75	04 25.1		A	HSX	60	1	2	2
4150		MANI	04 30 2252	S12 W78	04 25.1			HAX	230	1	2	3
4150		LEAR	05 01 0026	S12 W78	04 25.1		A	HAX	60	1	1	3
0006		PALE	04 19 1820	S13 E78	04 25.7		A	AXX		1		3
0006	23635	MWIL	04 22 1515	S14 E40	04 25.7	2	(AP)					
0006	23635	MWIL	04 23 1600	S14 E25	04 25.6	3	(BF)					
0006	23635	MWIL	04 25 1545	S14 W01	04 25.6	3	(AP)					
4158		HOLL	04 24 1452	N10 E11	04 25.4		B	BXO		2	2	3
4158		PALE	04 24 2107	N09 E08	04 25.5		B	BXO	10	2	3	2
4158		LEAR	04 25 0130	N09 E05	04 25.4		B	BXO	10	2	2	3
4158		RAMY	04 25 1330	N09 W00	04 25.6		B	BXO	10	3	4	4
4155	23636	MWIL	04 22 1515	N17 E57	04 27.0	2	(AP)					
4155		HOLL	04 22 1537	N18 E57	04 27.0		A	AXX		2	1	3
4155		MANI	04 23 0032	N18 E52	04 27.0			BXO	10	2	2	3
4155		LEAR	04 23 0157	N18 E52	04 27.0		A	AXX	10	2	2	3
4155		RAMY	04 23 1146	N17 E45	04 26.9		A	AXX	10	1	1	3
4155		HOLL	04 23 1634	N17 E42	04 26.9		A	AXX	10	1		3
4155		HOLL	04 24 1452	N20 E32	04 27.1		A	AXX		1		3

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4155		MANI	04	25	0058	N20	E26	04	27.0			AXX	10	1		3
4159		HOLL	04	24	1452	N14	E49	04	28.3		B	BXO	10	3	3	3
4159		PALE	04	24	2107	N14	E46	04	28.4		B	CSO	30	4	5	2
4159		LEAR	04	25	0130	N14	E43	04	28.3		B	BXO	10	2	3	3
4159		RAMY	04	25	1330	N16	E38	04	28.4		B	DAO	30	12	6	4
4159		HOLL	04	25	1426	N14	E36	04	28.3		B	BXO	20	5	6	3
4159		BOUL	04	25	1530	N14	E34	04	28.2		A	AXX	10	1	1	3
4159	23641	MWIL	04	25	1545	N13	E37	04	28.5	3	(B)					
4159		MANI	04	25	2257	N15	E32	04	28.4			CRO	30	3	4	3
4159		LEAR	04	26	0130	N14	E30	04	28.3		B	BXO	10	4	5	2
4159		ATHN	04	26	0615	:..3	E26	04	28.2			BXO	20	2	4	3
4159		HOLL	04	26	1423	N15	E24	04	28.4		B	BXO	10	2	5	3
4159		BOUL	04	26	1440	N14	E23	04	28.4		B	BXO	10	3	5	2
4159		ATHN	04	27	0915	N12	E11	04	28.2			BXO	30	2	3	3
4159		RAMY	04	27	1145	N13	E11	04	28.3		B	DAO	40	7	5	4
4159		HOLL	04	27	1453	N15	E09	04	28.3		B	BXO	20	15	6	3
4159	23641	MWIL	04	27	1545	N13	E08	04	28.3	4	(B)					
4159		BOUL	04	27	1610	N13	E09	04	28.4		B	DRI	30	6	5	3
4159		LEAR	04	28	0022	N14	E03	04	28.2		B	DRO	30	11	6	4
4159		MANI	04	28	0247	N14	E03	04	28.3			DRO	70	11	6	3
4159		RAMY	04	28	1340	N14	W04	04	28.3		B	DAO	80	4	6	3
4159		HOLL	04	28	1512	N15	W05	04	28.3		B	CSO	40	4	6	1
4159		BOUL	04	28	1545	N14	W05	04	28.3		B	DSO	40	5	6	3
4159		PALE	04	28	1910	N13	W07	04	28.3		B	DRO	40	3	7	3
4159		MANI	04	28	2330	N14	W09	04	28.3			DRO	60	6	7	3
4159		LEAR	04	29	0118	N15	W10	04	28.3		B	DRO	40	8	7	4
4159		ATHN	04	29	0900	N14	W14	04	28.3		B	DAO	50	4	6	2
4159		RAMY	04	29	1259	N14	W18	04	28.2		B	DSO	50	10	8	4
4159		BOUL	04	29	1625	N15	W17	04	28.4		B	DSO	60	17	8	3
4159		PALE	04	29	1810	N14	W19	04	28.3		B	DSO	50	6	8	3
4159		MANI	04	29	2342	N14	W23	04	28.2			CRO	40	11	8	3
4159		LEAR	04	30	0056	N14	W23	04	28.3		B	DSO	60	9	8	3
4159		ATHN	04	30	0700	N14	W25	04	28.4			CRO	30	2	9	2
4159		BOUL	04	30	1530	N15	W30	04	28.4		B	BXO	10	2	7	2
4159		HOLL	04	30	1530	N15	W32	04	28.2		B	BXO	20	2	8	3
4159		PALE	04	30	1811	N14	W36	04	28.0		A	HSX	10	1	1	2
4159		MANI	04	30	2252	N13	W41	04	27.9			HSX	50	1	1	3
4159		LEAR	05	01	0026	N13	W41	04	27.9		A	HSX	20	1	1	3
4159		ATHN	05	01	0615	N17	W41	04	28.1			ARX	10	1	1	3
4159		BOUL	05	01	1455	N14	W45	04	28.2		A	AXX	10	1	1	2
4159		HOLL	05	01	1731	N19	W46	04	28.2		B	CRO	30	4	4	3
4159		PALE	05	01	1934	N13	W51	04	28.0		A	HRX	20	1	1	4
4159		LEAR	05	02	0016	N14	W54	04	27.9		A	HRX	20	1	1	3
4159		MANI	05	02	0412	N14	W56	04	27.9			HRX	50	1	1	3
4159	23641	MWIL	05	02	1430	N14	W61	04	28.0	3	(B)					
4159		HOLL	05	02	1436	N14	W62	04	27.9		A	AXX		1		2
4159		PALE	05	02	1735	N14	W63	04	28.0		A	AXX		1		3
4159		MANI	05	02	2303	N14	W68	04	27.8			AXX	50	1		3
4159		LEAR	05	03	0023	N14	W68	04	27.9		A	AXX		1		3
4159	23649	MWIL	05	04	1530	N13	W85	04	28.2	2	B					
4160		HOLL	04	25	1426	N19	E38	04	28.5		B	BXO	10	4	3	3
4160		BOUL	04	25	1530	N20	E34	04	28.2		B	BXO	10	2	2	3
4160	23640	MWIL	04	25	1545	N18	E37	04	28.5	3	(B)					
4160		MANI	04	25	2257	N20	E33	04	28.5			DRO	60	3	4	3
4160		LEAR	04	26	0130	N18	E31	04	28.4		B	CRO	30	4	3	2
4160		ATHN	04	26	0615	N18	E28	04	28.4			BXO	20	2	4	3
4160		HOLL	04	26	1423	N18	E25	04	28.5		B	CRO	30	3	4	3
4160		BOUL	04	26	1440	N18	E25	04	28.5		B	DSO	60	5	5	2
4160		ATHN	04	27	0915	N16	E13	04	28.4			CSO	80	3	4	3
4160		RAMY	04	27	1145	N17	E13	04	28.5		B	DAO	90	9	5	4
4160		HOLL	04	27	1453	N18	E10	04	28.4		B	CSO	50	5	5	3
4160	23640	MWIL	04	27	1545	N18	E09	04	28.3	4	(B)					
4160		BOUL	04	27	1610	N18	E10	04	28.4		B	DSO	50	5	6	3
4160		LEAR	04	28	0022	N18	E04	04	28.3		B	DRO	30	10	6	4
4160		MANI	04	28	0247	N18	E04	04	28.4			DRO	50	9	6	3
4160		RAMY	04	28	1340	N19	W04	04	28.3		B	CAO	20	14	6	3
4160		HOLL	04	28	1512	N19	W05	04	28.3		B	BXO	60	13	6	1
4160		BOUL	04	28	1545	N19	W05	04	28.3		B	CRI	20	16	6	3
4160		PALE	04	28	1910	N19	W07	04	28.3		B	BXO	30	7	6	3

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4160		MANI	04	28	2330	N19	W09	04	28.3			CSO	40	16	7	3
4160		LEAR	04	29	0118	N19	W11	04	28.2		B	DAO	60	18	7	4
4160		ATHN	04	29	0900	N18	W13	04	28.4		B	CRO	30	6	5	2
4160		RAMY	04	29	1259	N18	W18	04	28.2		B	CRO	80	13	7	4
4160		BOUL	04	29	1625	N19	W19	04	28.2		B	CSO	40	10	6	3
4160		PALE	04	29	1810	N19	W19	04	28.3		B	CRO	40	10	6	3
4160		MANI	04	29	2342	N19	W23	04	28.2			CRO	40	8	7	3
4160		LEAR	04	30	0056	N19	W23	04	28.3		B	CSO	70	11	7	3
4160		ATHN	04	30	0700	N18	W24	04	28.5			CRO	60	3	8	2
4160		BOUL	04	30	1530	N19	W32	04	28.2		B	CSO	20	5	5	2
4160		HOLL	04	30	1530	N19	W32	04	28.2		B	CSO	40	7	6	3
4160		PALE	04	30	1811	N18	W33	04	28.2		B	CRO	40	6	6	2
4160		MANI	04	30	2252	N17	W36	04	28.2			CRO	40	7	6	3
4160		LEAR	05	01	0026	N17	W36	04	28.3		B	CSO	60	7	6	3
4160		ATHN	05	01	0615	N21	W39	04	28.3			BXO	40	3	3	3
4160		BOUL	05	01	1455	N18	W42	04	28.4		B	CRO	20	2	3	2
4160		HOLL	05	01	1731	N15	W50	04	27.9		A	AXX		1		3
4160		PALE	05	01	1934	N18	W47	04	28.2		B	DRO	30	3	4	4
4160		LEAR	05	02	0016	N19	W49	04	28.3		B	DRO	20	5	5	3
4160		MANI	05	02	0412	N19	W53	04	28.1			DRO	50	5	5	3
4160	23640	MWIL	05	02	1430	N18	W57	04	28.3	3	(B)					
4160		BOUL	05	02	1430	N20	W57	04	28.2		B	CRO	20	3	6	2
4160		HOLL	05	02	1436	N19	W59	04	28.1		B	CSO	40	3	4	2
4160		PALE	05	02	1735	N18	W56	04	28.5		B	BXO	10	2	3	3
4160		MANI	05	02	2303	N19	W65	04	28.0			CSO	80	6	4	3
4160		LEAR	05	03	0023	N19	W64	04	28.1		B	CRO	20	5	7	3
4160		HOLL	05	03	1447	N18	W74	04	28.0		A	AXX		1		3
4160	23640	MWIL	05	03	1530	N18	W72	04	28.2	3	(B)					
4154		HOLL	04	21	1448	S11	E86	04	28.1		A	HSX	40	1	1	4
4154		PALE	04	21	1825	S11	E82	04	27.9		A	HSX	40	1	2	3
4154		LEAR	04	22	0330	S11	E82	04	28.3		B	DSO	180	3	9	2
4154	23637	MWIL	04	22	1515	S11	E75	04	28.3	3	(AP)					
4154		HOLL	04	22	1537	S14	E75	04	28.3		B	DKO	800	3	10	3
4154		MANI	04	23	0032	S11	E69	04	28.2			DKO	510	6	6	3
4154		LEAR	04	23	0157	S14	E72	04	28.5		B	EHO	590	5	14	3
4154		ATHN	04	23	0630	S15	E65	04	28.2			DKO	300	4	10	2
4154		RAMY	04	23	1146	S12	E62	04	28.2		B	DKO	380	5	7	3
4154	23637	MWIL	04	23	1600	S10	E60	04	28.2	4	(AP)					
4154		BOUL	04	23	1615	S13	E59	04	28.1		B	DAO	400	3	7	3
4154		HOLL	04	23	1634	S12	E59	04	28.1		B	DKO	230	6	8	3
4154		PALE	04	23	1755	S12	E59	04	28.2		B	DAO	220	8	8	4
4154		LEAR	04	24	0036	S14	E57	04	28.3		B	DKO	290	11	6	2
4154		MANI	04	24	0123	S13	E55	04	28.2			DKO	320	9	7	3
4154		RAMY	04	24	1130	S12	E49	04	28.2		B	DAO	150	8	6	3
4154		HOLL	04	24	1452	S12	E46	04	28.1		B	DKO	210	8	6	3
4154		BOUL	04	24	1620	S12	E47	04	28.2		B	DAO	230	7	6	3
4154		PALE	04	24	2107	S11	E44	04	28.2		B	DKO	200	13	6	2
4154		LEAR	04	25	0130	S12	E41	04	28.2		B	DKO	200	11	7	3
4154		ATHN	04	25	1200	S13	E34	04	28.1			CRO	50	2	8	2
4154		RAMY	04	25	1330	S13	E36	04	28.3		B	DAO	200	25	7	4
4154		HOLL	04	25	1426	S12	E35	04	28.2		A	HAX	350	13	7	3
4154		BOUL	04	25	1530	S12	E33	04	28.1		B	DAO	160	7	6	3
4154	23637	MWIL	04	25	1545	S10	E31	04	28.0	4	(AP)					
4154		MANI	04	25	2257	S12	E30	04	28.2			DAO	290	14	6	3
4154		LEAR	04	26	0130	S12	E28	04	28.2		BD	DKO	140	13	7	2
4154		ATHN	04	26	0615	S13	E22	04	27.9			DHO	150	2	5	3
4154		HOLL	04	26	1423	S12	E21	04	28.2		A	HSX	170	8	7	3
4154		BOUL	04	26	1440	S11	E20	04	28.1		B	DAO	180	8	6	2
4154		ATHN	04	27	0915	S14	E11	04	28.2			DSO	150	5	5	3
4154		RAMY	04	27	1145	S13	E08	04	28.1		B	DAO	120	16	6	4
4154		HOLL	04	27	1453	S11	E07	04	28.1		A	CSO	100	8	7	3
4154	23637	MWIL	04	27	1545	S12	E08	04	28.3	5	(BY)					
4154		BOUL	04	27	1610	S13	E12	04	28.6		BG	FKI	290	27	16	3
4154		LEAR	04	28	0022	S15	E08	04	28.6		BG	FKO	470	35	16	4
4154		MANI	04	28	0247	S14	E07	04	28.6			FKO	580	26	16	3
4154		RAMY	04	28	1340	S15	E03	04	28.8		BG	EKO	320	24	13	3
4154		HOLL	04	28	1512	S14	W01	04	28.6		BG	EKO	310	15	13	1
4154		BOUL	04	28	1545	S13	W00	04	28.7		BG	FKI	340	25	16	3
4154		PALE	04	28	1910	S14	W02	04	28.6		BG	EKO	340	13	15	3
4154		MANI	04	28	2330	S14	W06	04	28.5			FKO	480	21	16	3

REGIONS OF SUNSPOT ACTIVITY
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APRIL 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4154		LEAR	04	29	0118	S14	W06	04	28.6		B	FHO	390	20	16	4
4154		ATHN	04	29	0900	S14	W09	04	28.7		BG	EHO	200	3	12	2
4154		RAMY	04	29	1259	S15	W15	04	28.4		BG	EKO	230	13	13	4
4154		BOUL	04	29	1625	S13	W13	04	28.7		B	EHO	300	15	12	3
4154		PALE	04	29	1810	S15	W13	04	28.8		B	EKO	240	11	12	3
4154		MANI	04	29	2342	S15	W16	04	28.8			EKO	430	10	12	3
4154		LEAR	04	30	0056	S15	W18	04	28.7		B	ESO	310	13	14	3
4154		ATHN	04	30	0700	S15	W20	04	28.8			EHO	180	7	11	2
4154		BOUL	04	30	1530	S14	W24	04	28.8		B	EHO	210	10	15	2
4154		HOLL	04	30	1530	S14	W27	04	28.6		B	ESO	250	6	12	3
4154		PALE	04	30	1811	S14	W27	04	28.7		B	EAO	220	8	11	2
4154		MANI	04	30	2252	S14	W30	04	28.7			EAO	480	9	12	3
4154		LEAR	05	01	0026	S14	W30	04	28.7		B	EHO	250	10	12	3
4154		ATHN	05	01	0615	S13	W33	04	28.8			EHO	170	4	11	3
4154		BOUL	05	01	1455	S15	W38	04	28.7		B	EHO	160	7	11	2
4154		HOLL	05	01	1731	S15	W40	04	28.7		B	FHO	320	11	16	3
4154		PALE	05	01	1934	S16	W41	04	28.7		B	ESO	190	7	12	4
4154		LEAR	05	02	0016	S16	W44	04	28.7		B	ESO	250	7	12	3
4154		MANI	05	02	0412	S16	W47	04	28.6			ESO	560	7	12	3
4154	23637	MWIL	05	02	1430	S12	W57	04	28.3	3	(AP)					
4154		BOUL	05	02	1430	S13	W52	04	28.7		B	DSO	140	3	9	2
4154		HOLL	05	02	1436	S15	W52	04	28.7		B	DSO	170	3	9	2
4154		PALE	05	02	1735	S15	W54	04	28.6		B	DSO	110	2	10	3
4154		MANI	05	02	2303	S15	W58	04	28.6			ESO	520	5	10	3
4154		LEAR	05	03	0023	S16	W57	04	28.7		B	ESO	150	5	11	3
4154		ATHN	05	03	0630	S15	W58	04	28.9			DSO	90	2	8	3
4154		BOUL	05	03	1430	S14	W66	04	28.6		B	CSO	130	2	11	3
4154		HOLL	05	03	1447	S15	W65	04	28.7		B	CSO	200	3	12	3
4154	23637	MWIL	05	03	1530	S13	W70	04	28.4	4	(AP)					
4154		PALE	05	03	1910	S15	W68	04	28.6		B	CSO	80	3	11	3
4154		LEAR	05	04	0016	S16	W70	04	28.7		B	CHO	150	3	9	3
4154		MANI	05	04	0202	S15	W72	04	28.6			CSO	250	4	10	2
4154		ATHN	05	04	0645	S19	W69	04	29.0			HKX	110	1	4	3
4154		RAMY	05	04	1145	S18	W70	04	29.2		A	HAX	110	1	2	4
4154		LEAR	05	05	0200	S18	W80	04	29.0		A	HAX	60	2	2	3
4154		MANI	05	05	0201	S18	W82	04	28.8		A	HSX	280	1	2	2
4156	23638	MWIL	04	22	1515	S15	E82	04	28.8	3	(AF)					
4156		MANI	04	23	0032	S14	E77	04	28.8			DSO	280	4	5	3
4156		RAMY	04	23	1146	S15	E72	04	28.9		B	DAO	100	2	6	3
4156	23638	MWIL	04	23	1600	S16	E68	04	28.8	4	(BY)					
4156		BOUL	04	23	1615	S16	E69	04	28.9		B	CAO	170	2	6	3
4156		HOLL	04	23	1634	S16	E70	04	29.0		B	DSO	230	7	6	3
4156		PALE	04	23	1755	S17	E62	04	28.5		B	CAO	140	9	9	4
4156		LEAR	04	24	0036	S16	E67	04	29.1		B	DSO	130	8	5	2
4156		MANI	04	24	0123	S15	E65	04	29.0			DSO	330	6	6	3
4156		RAMY	04	24	1130	S16	E59	04	29.0		B	DSO	250	6	5	3
4156		HOLL	04	24	1452	S16	E57	04	28.9		B	DSI	200	14	5	3
4156		BOUL	04	24	1620	S14	E55	04	28.8		B	DSO	200	3	5	3
4156		PALE	04	24	2107	S16	E54	04	29.0		B	DAO	200	13	5	2
4156		LEAR	04	25	0130	S15	E53	04	29.1		B	DAO	210	12	6	3
4156		ATHN	04	25	1200	S18	E44	04	28.9			DAO	140	7	6	2
4156		RAMY	04	25	1330	S17	E46	04	29.1		BG	DKO	370	19	6	4
4156		HOLL	04	25	1426	S16	E45	04	29.0		B	DSO	330	11	7	3
4156		BOUL	04	25	1530	S14	E43	04	28.9		B	CSO	190	7	5	3
4156	23638	MWIL	04	25	1545	S16	E40	04	28.7	5	(D)					
4156		MANI	04	25	2257	S16	E40	04	29.0			DKO	580	12	6	3
4156		LEAR	04	26	0130	S17	E38	04	29.0		B	DKI	320	25	7	2
4156		ATHN	04	26	0615	S18	E34	04	28.9			DHO	290	3	5	3
4156		HOLL	04	26	1423	S17	E32	04	29.0		BGD	DKI	360	12	6	3
4156		BOUL	04	26	1440	S15	E28	04	28.7		BD	DKI	390	26	9	2
4156		ATHN	04	27	0915	S19	E20	04	28.9			DKI	300	12	6	3
4156		RAMY	04	27	1145	S17	E23	04	29.2		BD	FKO	280	34	16	4
4156		HOLL	04	27	1453	S16	E18	04	29.0		B	CKI	210	24	7	3
4156	23638	MWIL	04	27	1545	S17	E18	04	29.0	5	(BY)					
4156	23638	MWIL	05	02	1430	S19	W48	04	28.9	5	(AF)					
4156	23638	MWIL	05	03	1530	S19	W61	04	29.0	4	(AF)					
4156	23638	MWIL	05	04	1530	S19	W75	04	28.9	4	(AP)					
		BOUL	04	29	1625	S27	E02	04	29.8		A	AXX		1		3
4162		HOLL	04	27	1453	S15	E27	04	29.7		B	BXO	30	18	5	3

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4162	23643	MWIL	04	27	1545	S16	E27	04	29.7	4	(B)					
4162		BOUL	04	27	1610	S15	E27	04	29.7		B	CRI	30	12	6	3
4162		LEAR	04	28	0022	S16	E22	04	29.7		BG	DAI	150	31	6	4
4162		MANI	04	28	0247	S16	E20	04	29.6			DAI	310	25	7	3
4162		RAMY	04	28	1340	S15	E18	04	29.9		B	EAO	190	26	15	3
4162		HOLL	04	28	1512	S15	E15	04	29.8		B	EAI	180	19	12	1
4162		BOUL	04	28	1545	S15	E11	04	29.5		BG	DAI	120	16	8	3
4162		PALE	04	28	1910	S15	E14	04	29.9		BG	EAI	200	30	14	3
4162		MANI	04	28	2330	S15	E09	04	29.7			EAO	470	31	14	3
4162		LEAR	04	29	0118	S14	E08	04	29.7		B	DAO	310	31	9	4
4162		ATHN	04	29	0900	S15	E05	04	29.8		BG	EHI	320	17	13	2
4162		RAMY	04	29	1259	S16	W02	04	29.4		BG	EKI	380	34	16	4
4162		BOUL	04	29	1625	S13	E01	04	29.8		BG	DKI	450	33	10	3
4162		PALE	04	29	1810	S15	W02	04	29.6		BG	EKI	430	31	11	3
4162		MANI	04	29	2342	S15	W05	04	29.6			EKI	620	27	12	3
4162		LEAR	04	30	0056	S15	W05	04	29.7		BG	DKO	410	21	9	3
4162		ATHN	04	30	0700	S14	W08	04	29.7			EHO	350	12	12	2
4162		BOUL	04	30	1530	S14	W11	04	29.8		BG	EHO	360	16	11	2
4162		HOLL	04	30	1530	S15	W12	04	29.7		B	EHI	420	18	11	3
4162		PALE	04	30	1811	S15	W14	04	29.7		B	DHO	400	18	9	2
4162		MANI	04	30	2252	S16	W17	04	29.7			DKO	670	24	11	3
4162		LEAR	05	01	0026	S16	W17	04	29.7		B	EKI	420	35	11	3
4162		ATHN	05	01	0615	S13	W19	04	29.8			DHI	370	8	10	3
4162		BOUL	05	01	1455	S14	W25	04	29.7		B	DHO	410	15	9	2
4162		HOLL	05	01	1731	S15	W26	04	29.8		B	EKI	510	30	10	3
4162		PALE	05	01	1934	S15	W26	04	29.8		B	DKI	420	20	9	4
4162		LEAR	05	02	0016	S14	W31	04	29.7		B	DKO	500	27	9	3
4162		MANI	05	02	0412	S15	W34	04	29.6			DKO	740	27	9	3
4162		BOUL	05	02	1430	S13	W38	04	29.7		B	DHO	270	17	8	2
4162	23643	MWIL	05	02	1430	S15	W38	04	29.7	5	(B)					
4162		HOLL	05	02	1436	S15	W38	04	29.7		B	DKI	420	14	9	2
4162		PALE	05	02	1735	S15	W39	04	29.8		B	DKI	380	18	8	3
4162		MANI	05	02	2303	S15	W44	04	29.6			DKI	840	13	9	3
4162		LEAR	05	03	0023	S15	W44	04	29.7		B	DKO	440	19	8	3
4162		ATHN	05	03	0630	S15	W45	04	29.9			DKO	350	8	7	3
4162		BOUL	05	03	1430	S12	W53	04	29.6		B	CHO	260	6	6	3
4162		HOLL	05	03	1447	S15	W52	04	29.7		B	CKO	420	11	8	3
4162	23643	MWIL	05	03	1530	S14	W54	04	29.6	5	(B)					
4162		PALE	05	03	1910	S15	W54	04	29.7		B	CKO	290	13	7	3
4162		LEAR	05	04	0016	S14	W57	04	29.7		B	DKO	380	14	7	3
4162		MANI	05	04	0202	S15	W59	04	29.6			CKO	460	12	6	2
4162		ATHN	05	04	0645	S14	W60	04	29.7			HKX	200	1	5	3
4162		RAMY	05	04	1145	S13	W65	04	29.6		A	HKX	230	1	3	4
4162	23643	MWIL	05	04	1530	S14	W68	04	29.5	5	(BP)					
4162		LEAR	05	05	0200	S14	W74	04	29.5		BD	CKO	250	5	5	3
4162		MANI	05	05	0201	S13	W74	04	29.5		A	HKX	420	1	3	2
4162		ATHN	05	05	0715	S11	W77	04	29.5			HKO	290	1	5	4
4162		RAMY	05	05	1207	S15	W80	04	29.4		A	HKX	130	1	5	3
4162		HOLL	05	05	1403	S13	W81	04	29.5		A	HHX	310	2	3	4
4162		PALE	05	05	1900	S13	W83	04	29.5		A	HHX	130	1	3	3
4162		MANI	05	05	2256	S13	W87	04	29.4			HHX	740	1	2	2
		LEAR	04	29	0118	S18	E11	04	29.9		A	AXX		1		4
4157		LEAR	04	24	0036	S03	E85	04	30.4		A	HKX	70	1	3	2
4157		MANI	04	24	0123	S03	E85	04	30.4			HAX	440	1	3	3
4157		RAMY	04	24	1130	S04	E78	04	30.3		B	CKO	100	7	6	3
4157		HOLL	04	24	1452	S03	E77	04	30.4		B	DKO	210	7	8	3
4157		BOUL	04	24	1620	S03	E75	04	30.3		B	CKO	130	3	7	3
4157		PALE	04	24	2107	S03	E73	04	30.3		B	DAO	190	10	10	2
4157		LEAR	04	25	0130	S04	E70	04	30.3		B	EAO	220	9	11	3
4157		ATHN	04	25	1200	S04	E60	04	30.0			HSX	20	1	1	2
4157		RAMY	04	25	1330	S03	E65	04	30.4		B	EAO	300	12	11	4
4157		HOLL	04	25	1426	S03	E64	04	30.4		B	DSO	270	11	10	3
4157		BOUL	04	25	1530	S03	E60	04	30.1		B	CSO	80	5	7	3
4157	23642	MWIL	04	25	1545	S04	E63	04	30.4	4	(B)					
4157		MANI	04	25	2257	S03	E59	04	30.4			DAO	360	14	10	3
4157		LEAR	04	26	0130	S04	E57	04	30.3		B	EAO	250	13	11	2
4157		ATHN	04	26	0615	S07	E53	04	30.2			ESO	190	2	11	3
4157		HOLL	04	26	1423	S03	E50	04	30.3		B	DSO	220	13	10	3
4157		BOUL	04	26	1440	S04	E49	04	30.3		BG	DSI	240	15	10	2

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

APRIL 1983

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Time Mo	Day	(UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
4157		ATHN	04	27	0915	S07	E39	04	30.3			EAO	160	8	11	3
4157		RAMY	04	27	1145	S05	E38	04	30.3		BG	EAO	170	24	13	4
4157		HOLL	04	27	1453	S03	E36	04	30.3		B	CAO	160	22	13	3
4157	23642	MWIL	04	27	1545	S04	E34	04	30.2	5	(BY)					
4157		BOUL	04	27	1610	S03	E35	04	30.3		B	CAO	170	25	13	3
4157		LEAR	04	28	0022	S04	E29	04	30.2		GD	ESI	150	23	14	4
4157		MANI	04	28	0247	S04	E28	04	30.2			EAO	230	20	12	3
4157		RAMY	04	28	1340	S03	E22	04	30.2		BG	EAO	130	17	11	3
4157		HOLL	04	28	1512	S03	E19	04	30.1		B	CSO	50	9	4	1
4157		BOUL	04	28	1545	S04	E17	04	29.9		BG	CAI	60	5	6	3
4157		PALE	04	28	1910	S04	E16	04	30.0		B	CSO	90	8	7	3
4157		MANI	04	28	2330	S04	E14	04	30.0			DSO	110	15	8	3
4157		LEAR	04	29	0118	S02	E12	04	30.0		B	CSO	90	16	9	4
4157		ATHN	04	29	0900	S04	E09	04	30.0		BG	DSO	30	6	8	2
4157		RAMY	04	29	1259	S04	E05	04	29.9		BG	DSI	80	12	8	4
4157		BOUL	04	29	1625	S02	E08	04	30.3		BG	DSI	70	16	7	3
4157		PALE	04	29	1810	S03	E03	04	30.0		BG	DSI	50	9	8	3
4157		MANI	04	29	2342	S04	E01	04	30.1			CSO	80	13	8	3
4157		LEAR	04	30	0056	S01	W03	04	29.8		BG	DSI	60	9	5	3
4157		ATHN	04	30	0700	S05	W05	04	29.9			CRO	80	4	6	2
4157		HOLL	04	30	1530	S03	W08	04	30.0		B	CSO	50	10	8	3
4157		BOUL	04	30	1530	S03	W09	04	30.0		BG	DSO	50	5	5	2
4157		PALE	04	30	1811	S03	W10	04	30.0		B	CSO	40	8	4	2
4157		MANI	04	30	2252	S03	W14	04	29.9			CSO	40	8	4	3
4157		LEAR	05	01	0026	S03	W14	04	30.0		B	CSO	30	8	4	3
4157		ATHN	05	01	0615	S02	W18	04	29.9			BXO	30	3	4	3
4157		BOUL	05	01	1455	S03	W22	04	30.0		B	CRO	10	3	3	2
4157		HOLL	05	01	1731	S03	W24	04	29.9		B	BXO	10	3	3	3
4157		PALE	05	01	1934	S04	W26	04	29.9		B	BXO	10	2	3	4
4157		LEAR	05	02	0016	S03	W27	04	30.0		B	BXO	30	15	7	3
4157		MANI	05	02	0412	S03	W31	04	29.9			BXO	70	15	7	3
4157		BOUL	05	02	1430	S02	W36	04	29.9		B	CSO	40	10	4	2
4157	23642	MWIL	05	02	1430	S04	W36	04	29.9	5	(D)					
4157		HOLL	05	02	1436	S04	W36	04	29.9		B	CAO	80	11	4	2
4157		PALE	05	02	1735	S04	W38	04	29.9		BD	DAI	90	12	4	3
4157		MANI	05	02	2303	S04	W42	04	29.8			CAI	450	18	5	3
4157		LEAR	05	03	0023	S03	W42	04	29.9		B	DKI	270	21	6	3
4157		ATHN	05	03	0630	S04	W43	04	30.1			DSO	200	5	6	3
4157		BOUL	05	03	1430	S03	W47	04	30.1		BD	DKO	300	6	6	3
4157		HOLL	05	03	1447	S03	W49	04	30.0		B	DKO	340	6	5	3
4157	23642	MWIL	05	03	1530	S04	W50	04	29.9	5	(D)					
4157		PALE	05	03	1910	S03	W51	04	30.0		B	CKO	290	13	6	3
4157		LEAR	05	04	0016	S03	W56	04	29.8		B	DKO	370	11	6	3
4157		MANI	05	04	0202	S04	W56	04	29.9			DKO	500	10	6	2
4157		ATHN	05	04	0645	S05	W56	04	30.1			DKO	330	6	6	3
4157		RAMY	05	04	1145	S03	W60	04	30.0		BD	DAO	200	14	5	4
4157	23642	MWIL	05	04	1530	S04	W63	04	29.9	5	(BP)					
4157		LEAR	05	05	0200	S04	W69	04	29.9		BD	DKO	160	11	5	3
4157		MANI	05	05	0201	S03	W70	04	29.9		B	DAO	440	8	6	2
4157		ATHN	05	05	0715	S02	W77	04	29.5			EKO	310	5	11	4
4157		RAMY	05	05	1207	S05	W73	04	30.0		B	DAO	240	10	10	3
4157		HOLL	05	05	1403	S04	W76	04	29.9		B	CAO	150	5	7	4
4157		PALE	05	05	1900	S05	W79	04	29.9		B	CAO	150	3	6	3
4157		MANI	05	05	2256	S04	W83	04	29.7			CAO	520	3	6	2
4164		BOUL	04	28	1545	S15	E22	04	30.3		B	CRI	10	4	4	3
4164		LEAR	04	29	0118	S17	E17	04	30.3		B	CRO	20	3	6	4
4164		BOUL	04	29	1625	S15	E09	04	30.4		A	AXX	10	2	2	3
4164		PALE	04	29	1810	S16	E06	04	30.2		A	AXX	10	1	1	3
4164		MANI	04	29	2342	S16	E03	04	30.2			AXX	10	1	1	3
0007	23644	MWIL	05	02	1430	S06	W27	04	30.6	3	(AF)					
0007		HOLL	05	02	1436	S06	W26	04	30.7		A	AXX	10	3	2	2
0007		MANI	05	02	2303	S06	W33	04	30.5			AXX	10	3	2	3
		MANI	04	25	2257	S13	E65	04	30.9			AXX	10	1		3

SUDDEN IONOSPHERIC DISTURBANCES

April 1983

Qual	Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
3	01	1306	1309	1316	1	1		1				NF	
4	01	1527	1533	1552	1	1		1				NF	
3	01	1630	1655	1730	1-	3					2	NF	
3	02	0940	0948	1015	1	1		1				NF	
4	02	1432	1441	1457	1	1		1				NF	
3													
3	03	1305	1308	1315	1-	3	1	2		1	3	1306	No data
1	03	1520	1533	1551	1	1		1				NF	
3	03	1700	1715	1800	2	3	1				14	1658	4127
3													
4	04	0600	0614	0630U	1-	1				1		0550	X-ray
2	04	0640	0648	0710	1-	1				1		0643	4135
4	04	1034	1039	1050	1-	3	1			1		1031	X-ray
3	04	1328	1332	1400	1	5		1		1	7	1326	4127
3	04	1643	1645	1740	1-	3					12	1643	4127
3	04	2000	2004	2025	1-	3					2	2003	4127
3													
2	05	0034	0043	0117	1-	3			1	1		0035	4127
3	05	0140	0150	0200U	1-	3				1	2	NF	
2	05	0426	0431	0510	1-	3	1				1	0424	4127
2	05	1520	1533	1541	1	1		1				NF	
3	05	1729	1731	1755	1	3	2				8	1728	4129
3	05	2335	2344	0000	1-	1			1			2341	4127
3													
2	06	0454	0504	0520	1-	1			1			0458	4135
3	06	1416	1422	1436	1	1		1				*	
4													
3	07	0120	0130	0140D	1-	1				1		0119	4137
3	07	0144	0159	0242	1-	3		1	1	1	1	0144	4127
2	07	0441	0448	0524	1-	3			1	1	1	0438	X-ray
2	07	0853	0856	0905	1	1		1				NF	
3	07	1440	1444	1507	1	1		1				*	
3													
3	08	0412	0417	0427U	1-	1				1		NF	
3	08	1210	1216	1230	1-	3				1	2	1207	4137
3	08	1253	1300	1320	1-	1					1	1257	No data
3	08	1349	1355	1427	1	1		1				NF	
	08	2002	2008	2030	1-	1					1	NF	
3	08	2341	2349	0040	1-	1			1			2320	X-ray
3													
2	09	0114	0120	0128	1-	1				1		NF	
3	09	0207	0214	0225	1-	1				1		NF	
4	09	0416	0424	0447	1-	1			1			0415	X-ray
	09	0457	0504	0540	1-	1			1			0458	No data
3	09	0622	0634	0804	1+	5		1	1	2	6	0620	X-ray
2	09	1005		1130	1-	1		1				0958	X-ray
4													
3	11	0037	0042	0100	1-	3			1	1		0030	X-ray
4													
3	13	0250	0256	0310U	1-	1				1		NF	
2	13	0859	0914U	0936	1	1		1				NF	
	13	1251	1253	1322	1	1		1				NF	
3													
4	14	0000	0006	0015U	1-	1				1		0002	X-ray
3	14	0216	0249	0256D	1-	1				1		NF	
3	14	0252	0256	0310	1-	1				1		NF	
	14	0711	0713	0719U	1-	1				1		NF	
	14	0826	0845	0940	1-	1			1			0825E	No data
2	14	2338	2347	0110	1	5	1		1		5	2334	X-ray
3													
	15	0207	0218	0316	1-	3			1	1	3	NF	
3	15	0443	0454	0515	1-	3			1	1	1	NF	
	15	0630	0657	0843	2+	5		1	1	2	3	NF	
	15	0649	0657	0730	1-	5		2		2	3	0646	X-ray
	15	1456	1502	1520	1-	3				1	2	1455	X-ray

SUDDEN IONOSPHERIC DISTURBANCES

April 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
16	0010	0022	0040U	1-	1				1		0015	X-ray
17	0614	0618	0622	1	1		1				NF	
17	0630	0634	0651	1	1		1				NF	
17	0759	0823	0831	1	1		1				NF	
18	0130	0152	0618	3+	5	2		1	1	4	0122	X-ray
18	1325	1344	1509	1	1		1					NF
18	1915	1928	2000	1-	3	1				9	*	
18	2145	2204	2319	1-	1			1			*	
19	0220	0228	0254	1-	3			1	1		0217	X-ray
19	0533	0535	0545	1-	1					1	0531	X-ray
20	0020	0028	0053	1-	3			1		1	0020	4150
20	0040	0043	0056	1-	1				1		NF	
20	0140	0149	0210	1-	3			1	1	1	0142	X-ray
20	0619	0719	1010	1	3			1	1	1	0618	4150
20	0644	0650		1-	1				1		0645	No data
20	0710	0715	0730	1-	1				1		*	
20	1543	1553	1613	1	1		1				1551	X-ray
20	1726	1736	1800	1-	3	1				6	1726	4150
21	0148	0156	0300	1	3			1	1	3	0144	X-ray
21	0349	0355	0407	1-	3			1	1	1	0346	X-ray
21	0431	0440	0557	1-	3			1	1	2	0428	X-ray
21	0647	0700	0750	1-	5			1	2	2	0644	X-ray
21	1037	1040	1057	1-	3			1		1	1030	X-ray
21	1140	1155	1214	1	1		1				*	
21	1228	1235	1301	1	1		1				NF	
21	1329	1331	1356	1	1		1				1326	No data
21	1414	1420U	1444	1	1		1				1409	X-ray
21	1431	1436	1450	1-	3	1			1	4	NF	
21	2051	2107	2212	1-	5	1		1		9	2048	X-ray
21	2328	2334	0000	1-	3			1		1	NF	
22	0146	0155	0236	1-	3			1	1	1	0145	No data
22	0414	0422	0506	1-	3			1	1	1	0413	X-ray
22	0532	0534	0550	1-	3			1	1		0535	X-ray
22	0651	0655	0705	1-	3		1	1	2	1	0649	X-ray
22	0748	0752	0823	1-	1			1			0746	X-ray
22	0912	0922	1027	1+	5	2	1	1	2	2	0905	X-ray
22	1316	1321	1340	1-	3				1	8	1313	X-ray
22	1413	1417	1435	1-	3		1		1	10	NF	
22	1541	1543	1620	1	3					3	1536	X-ray
22	1630	1636	1655	1-	3					6	1629	X-ray
22	1835	1838	1900	1	3					3	NF	
22	2236	2239	2255	1-	1			1			2236	4150
22	2313	2320	2346	1-	1			1			NF	
22	2352	2359	0024	1-	1			1			NF	
23	0126	0142	0215	1-	3			1	1		0124	4156
23	0240	0254	0340	1-	3			1	1	1	0241	X-ray
23	0659	0708	0752	1-	3			1	1		0658	4150
23	1712	1714	1728	1	1		1				NF	
23	1802	1808	1819	1	3	1				9	NF	
23	2216	2230	2325	1-	1			1			2219	X-ray
23	2252	2259	2325	1-	1			1			NF	
24	0055	0100	0115U	1-	3			1	1		0056	4156
24	0124	0139	0252	1+	3	1		2	1	4	0125	No data
24	0330		0400	1-	1		1				NF	
24	1502	1505		1-	1	1					1509	4150
24	1534	1542	1600	1-	1					1	NF	
25	0431	0445	0626	2	3	1		1	1	3	0433	4157

SUDDEN IONOSPHERIC DISTURBANCES

April 1983

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
25	0625	0653	0723	1	1		1				NF	
25	0719	0726	0750	1-	3			1	1		0719	No data
25	0824	0837	0846	1	1		1				NF	
25	1147	1201U	1248	1	1		1				1145	X-ray
25	2143	2150	2222	1-	3			1		4	2140	4156
26	0110	0116	0136U	1-	1				1		NF	
26	0312	0318	0416	1-	3	1		1	1		0312E	No data
26	0700	0707	0739	1-	1			1			0700	4150
26	0812	0816	0840	1	3	1		1	2	1	0812	4150
26	2336	2347	0014	1-	3			1		3	2340	No data
27	0255	0259	0411	2	3	1		1	1	4	0256E	No data
27	0649	0652	0724	1-	1			1			0646	No data
27	1131	1203U	1251	1	1		1				*	
27	1355	1402	1445	2	5	3	3		1	7	1353	No data
27	1750	1800	1845	1+	3	1				4	1749	4157
27	1930	1938	2026	1-	3			1		5	1928	4162
27	2123	2132	2207	1-	3			1		6	2120	X-ray
27	2206	2214	2252	1-	3	1		1		5	2207	4162
27	2327	2333	2352	1-	3			1	1		2334	4154
27	2342	0011	0040	1-	1			1			2341	4162
28	0007	0011	0027D	1-	3			1	1		0006	4162
28	0044	0055	0136	1-	3			1	1		0045	4154
28	0620	0634	0740	1-	1				1		NF	
28	0944	1009U	1029U	1	1		1				0944	No data
28	1051	1054	1126	1-	3	3	1	1	1	1	1050	No data
28	1511	1515	1534	1	1		1				NF	
28	1835	1845	1915	1	3					5	1831	4154
28	2110	2126	2200	2	1	1					*	
29	0405	0411	0426	1-	3			1	1		0401	X-ray
29	0618	0634	0806	1-	3		1	1		1	0615	No data
29	1019	1026	1055	1	3	2	1	1	1	1	1020	No data
29	2012	2017	2052	1-	1			1			2012	X-ray
30	0100	0103	0120	1-	1					1	0058E	4165
30	0255	0311	0334	1	3			1	1	1	0255E	4154
30	0335	0353	0520	1	3			2	1	1	0336	4165
30	0720	0725	0730	1-	3			1	2		0721	4165
30	0802E	0826	1208	3+	5	4	3	1	1	4	0803	4165
30	1455	1508	1555	1	1		1				NF	

OBSERVATORIES REPORTING FOR APRIL 1983*

Ayrshire, Scotland (AY)	SES	Los Alamos, New Mexico, USA (LA)	SES
Darmstadt, GFR (DA)	SWF	Louisville, Kentucky, USA (A26)	SES
Durham, North Carolina, USA (A54)	SES	Maui, Hawaii, USA (MI)	SWF
Edenvale, South Africa (A52)	SES	Mayfield Village, Ohio, USA (A28)	SES
Farsta, Sweden (FA)	SES	Missoula, Montana, USA (A31)	SES, SWF
Frenchtown, Montana, USA (A56)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF
Glenorchy, Tasmania, Australia (GN)	SES	Patterson, New Jersey, USA (A46)	SES
Hiraiso, Japan (HI)	SWF	Portage, Michigan, USA (A51)	SES
Hobart, Tasmania, Australia (TA)	SEA	Roswell, New Mexico, USA (RW)	SES
Houston, Texas, USA (A50)	SES	San Antonio, Texas, USA (SA)	SES
Huancayo, Peru (HU)	SWF	St. Cloud, Minnesota, USA (SC)	SES
Inubo, Japan (IN)	SPA	Tavares, Florida, USA (A49)	SES
Juliusruh, GDR (JU)	SWF	Trenton, New Jersey, USA (NJ)	SES
Kasugai, Japan (KA)	SPA	Tucson, Arizona, USA (A9)	SES
Kuhlungsborn, GDR (KU)	SPA, SEA	Unhlanga Rocks, South Africa (A58)	SES
Lake Hiawatha, New Jersey, USA (A32)	SES	Upice, Czechoslovakia (UI)	SEA
Latrobe, Pennsylvania, USA (A19)	SES	Valley Cottage, New York, USA (A01)	SES
Lintong, China (LT)	SPA	Walla Walla, Washington, (USA) (A55)	SES

*Observations are not necessarily continuous for each reporting station.

SIDs by NOAA/SESC REGION

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Region Number																															
4127			1	3	3		1																								
4129					1																										
4135				1		1																									
4137							1	1																							
4150																				3		1	1	1		2					
4154																											1	2		1	
4156																							1	1	1						
4157																									1		1				
4162																											3	1			
4165																														4	
X-Ray				2			1	1	3		1			2	2	1		1	2	2	8	8	2		1		1		2		
No Flare	3	2	1		2		1	3	2				3	3	3		3	1		1	2	4	3	2	2	1		2		1	
No Flare Patrol						1	1											2		1	1						1	1			
No Data			1					1	1					1						1	1	1		1	1	2	3	2	2		
Event Totals	3	2	3	6	6	2	5	6	6		1		3	6	5	1	3	4	2	8	12	14	7	5	6	5	10	8	4	6	

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01	0000	0736	CULG	0158.5		2	0158.5		2				III G
			CULG	0207.5		2	0207.5		2				III G
			CULG				0235.0		2				III B
			CULG				0251.0		1				III B
			CULG	0701.5	0702.0	1	0701.5	0702.0	2				III G
	0538	1621	WEIS				0809.2	0809.6	1				III G
	1624	1714	WEIS				0903.2	0903.8	1				III G
			LEAR				0903.6	0903.8	1				III
	0909	1630	BLEN				0923.8	0930.6	2				III G
			BLEN	0923.9	0923.9	2							DC IM
			WEIS				0930.4	0930.7	2				III G
			BLEN				1049.6	1049.8	1				III B
			PALE				1700.0	1715.0	1				CONT
	2036	2400	CULG	2251.0	2251.5	1							III G
			CULG	2306.5		1	2306.5		1				III B,U
			CULG	2358.5		1							III B
02	0000	0735	CULG	0104.0	0104.5	1	0104.0		1				III G,U
	0535	1415	WEIS										
	0630	1630	BLEN										
			CULG				0717.0		1				III G
	2035	2400	CULG										
03	0000	0735	CULG	0409.0		2							III B
			CULG				0548.5	0549.0	1				III G
			LEAR				0548.5	0549.3	1				III
	0534	1309	WEIS				0548.6	0548.3	1				III G
			CULG	0626.0		1							III B
	1313	1717	WEIS				0907.0	0907.8	2				DC IM
	0630	1630	BLEN				0907.2	0907.8	3				III G
			BLEN	1304.2	1305.3	2	1304.2	1305.2	3				III GG,V
			WEIS				1304.3	1305.7	3				III GG/DC IM
			SGMR				1304.8	1305.3	1				V
	2035	2400	CULG				2151.5		1				III B
04	0000	0735	CULG				0307.5	0309.5	2				III GG
			LEAR				0308.0	0309.3	1				III
			LEAR				0507.3	0509.6	1				III
			CULG				0507.5	0509.5	3				III GG
	0531	1718	WEIS				1034.1	1035.6	3				III GG
	0630	1630	BLEN	1034.4	1035.5	3	1034.0	1035.5	3				III GG,V
			BLEN				1251.1	1252.0	3				III GG
			WEIS				1251.2	1252.0	2				III GDC IMRS
			BLEN	1326.4	1328.3	2	1326.4	1334.4	3				III GG
			WEIS				1326.6	1328.6	3				III GDC IM
			SGMR				1327.6	1328.0	1				III
			WEIS				1333.8	1334.2	2				III G
			WEIS				1642.4	1644.4	3				III GG/DC IM
			SGMR				1646.8	1648.3	2				V
	2035	2400	CULG										
05	0000	0726	CULG	0426.5	0427.0	3	0426.5	0424.0	3				III G,V
			LEAR				0426.6	0427.5	1				III
			CULG				0446.0		1				III B
	0530	1720	WEIS										
	0630	1630	BLEN										
	2035	2400	CULG				2338.0	2340.0	1				III G
06	0000	0734	CULG				0141.0		1				III B
			CULG				0242.5	0243.0	1				III G,U
			CULG				0459.5	0505.5	2				III N,V
			LEAR				0504.0	0505.5	1				III
	0528	1720	WEIS										
	0630	1630	BLEN										
	2035	2400	CULG										
07	0000	0734	CULG										
	0525	0546	WEIS										
	0549	1722	WEIS										
	0630	1101	BLEN										
	1434	1630	BLEN										

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07	2034	2400	CULG										
08	0000	0734	CULG				0309.5	0310.0	1				III G
	0517	1740	BLEN										
	0524	1346	WEIS				1159.4	1359.7	3				III B
	1352	1723	WEIS				1602.8	1603.1	2				III B
			SGMR				1857.1	1858.0	1				V
			PALE				1857.3	1857.8	1				III
			SGMR				2011.0	2011.1	1				III
			PALE				2011.3	2011.6	2				III
	2034	2400	CULG				2147.5		1				III B
			CULG				2228.0	2228.5	2				III G
09	0000	0733	CULG	0457.5		1	0458.0	0458.5	2				III G
			LEAR				0457.8	0504.1	1				III
			CULG				0459.5	0503.5	3				II H
			CULG				0501.5		2				III B
	0515	1744	BLEN										
			LEAR				0552.8	0553.6	1				III
			CULG				0553.0		2				III B
	0522	1529	WEIS				1451.3	1451.7	1				III B
	0840	1726	WEIS				1514.8	1515.2	1				III G
			WEIS				1556.3	1556.5	3				III B
			WEIS				1601.0	1601.2	2				III B
			WEIS				1602.6	1602.8	2				III B
			WEIS				1607.2	1607.4	1				III B
	2034	2400	CULG				2213.0	2221.0	1				III N
10	0000	0704	CULG				0133.0		1				III B
			CULG				0259.0	0259.5	3	0259.0	0259.5	2	III G
			LEAR				0259.0	0259.3	1				III
			LEAR				0338.3	0339.3	1				III
			CULG				0338.5	0339.5	1				III GG
			CULG				0631.5	0359.0	2				III N
			LEAR				0631.6	0631.8	1				III
	0519	0620	WEIS				0631.7	0632.3	2				III G
	0623	1319	WEIS				0648.2	0648.3	1				III B
			LEAR				0656.6	0658.8	1				III
	1324	1725	WEIS				0656.8	0658.8	1				III G
	0714	0733	CULG				0717.5		1				III B
			LEAR				0717.6	0717.8	1				III
			WEIS				0717.7	0718.0	2				III G
			LEAR				0751.5	0751.8	1				III
			WEIS				9751.6	0751.8	2				III B
			WEIS				0950.8	0958.2	3				III GG
			LEAR				0951.8	0954.1	1				III
	0514	1744	BLEN	0953.3	0953.5	1	0951.8	0957.0	3				III GG
			WEIS				1015.2	1015.6	2				III G
			WEIS				1024.5	1025.9	2				III G
			WEIS				1102.3	1103.3	3				III G
			WEIS				1108.5	1108.7	1				III B
			WEIS				1110.9	1111.0	2				III B
			WEIS				1115.9	1115.4	2				III G
			WEIS				1150.3	1150.9	2				III G
			WEIS				1153.3	1154.2	2				III G
			WEIS				1216.6	1216.9	3				III G
			WEIS				1221.3	1221.5	2				III G
			WEIS				1315.5	1315.6	1				III B
			WEIS				1336.9	1338.3	1				III G
			WEIS				1409.4	1410.3	1				III G
			SGMR				1510.3	1510.6	1				III
			WEIS				1510.3	1510.7	3				III G
	2033	2400	CULG				2216.0	2216.5	2				III G
			CULG				2217.5	2218.0	1				III G
11	0000	0733	CULG				0611.5	0612.0	1				III G
	0512	1745	BLEN				0612.0	0612.2	1				III G
	0600	1729	WEIS				0941.1	0941.8	2				III G
			PALE				1950.6	1951.1	2				III
			SGMR				1951.8	1952.3	1				V
	2033	2400	CULG										

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12	0000	0733	CULG										
	0516	0927	WEIS										
	0936	1729	WEIS										
	0504	1746	BLEN	1423.1	1426.3	1							DCIM
	2033	2400	CULG				2312.0	2317.5	1				IIIS
			CULG				2321.0	2322.0	2				IIIG
13	0000	0732	CULG										
	0502	1400	BLEN										
	0515	1633	WEIS										
	1713	1732	WEIS										
	2037	2400	CULG										
14	0000	0732	CULG										
	0511	1734	WEIS				0712.8	0712.9	1				IIIB
	1410	1749	BLEN										
			WEIS				1425.4	1426.9	2				IIIG
	2033	2400	CULG										
15	0000	0727	CULG				0207.0	0246.0	1				II
			CULG	0207.5	0208.5	1							IIIG
			CULG				0224.5	0227.0	3				II
	0502	1750	BLEN										
	1245	1736	WEIS										
	0509	1217	WEIS				1442.8	1452.9	1				IIIB
	2033	2400	CULG										
16	0000	0732	CULG										
	0502	1752	BLEN										
	0507	1737	WEIS				1043.7	1044.4	3				IIIG
	2032	2400	CULG										
17	0000	0731	CULG										
	1155	1738	WEIS				1228.9	1229.0	1				IIIB
	0747	1033	WEIS				1230.1	1230.3	1				IIIG
			WEIS				1231.4	1231.6	1				IIIG
			WEIS				1251.0	1534.0	1				IS
			WEIS				1254.7	1255.3	1				IIIG
			WEIS				1312.2	1313.7	1				IIIG
			WEIS				1418.7	1418.8	1				IIIB
			WEIS				1420.1	1420.2	1				IIIB
			WEIS				1425.1	1438.4	2				IIIGG
			WEIS				1441.8	1441.9	2				IIIB
			WEIS				1513.0	1515.4	1				IIIB
			WEIS				1523.2	1537.7	1				IIIGG
	0503	1753	BLEN				1525.5	1528.0	1				IIIG
			WEIS				1603.5	1603.7	2				IIIG
	2032	2400	CULG	2040.0	2400.0	1							IS
			CULG				2113.5	2239.0	1				IIIN
			CULG				2308.5		2				IIIG
18	0000	0731	CULG	0000.0	0139.5								IS
			CULG				0133.0	0144.0	3				II H
			CULG							0134.0	0215.0	1	SWF
			CULG	0137.0	0141.0	1							CONT
			CULG				0144.0	0210.0	1				IV
			CULG				0158.5	0159.0	1				POSS II
			CULG	0203.5	0204.0	2	0203.5	0204.0	2				IIIG
			CULG	0310.0	0312.0	1							CONT
			CULG	0318.0	0318.5	1							CONT
			CULG	0326.5	0337.0	2							CONT
	0502	1754	BLEN				0603.3	0603.5	1				IIIG
			CULG				0717.0	0720.0	1				IS
	0503	1204	WEIS				0812.6	0813.2	2				IIIG
	1258	1737	WEIS				0821.4	0821.9	1				IIIG
			WEIS				0834.2	0835.3	1				IIIG
			BLEN				0836.3	0836.5	1				IIIG
			WEIS				0842.7	0842.9	1				IIIG
			WEIS				0905.1	0909.4	2				IIIG
			WEIS				0924.2	0924.3	1				IIIB
			WEIS				0939.7	0939.9	1				IIIB

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18			WEIS				0943.9	0944.4	2				IIIG
			WEIS				1002.1	1002.3	1				IIIB
			WEIS				1006.7	1006.9	1				IIIB
			WEIS				1014.2	1014.8	2				IIIG
			WEIS				1017.3	1017.5	1				IIIB
			WEIS				1040.1	1040.3	1				IIIG
			WEIS				1141.7	1141.9	1				IIIB
			WEIS				1331.8	1331.9	1				IIIB
			WEIS				1338.4	1338.6	1				IIIB
			WEIS				1342.9	1343.1	1				B
			BLEN				1356.9	1359.5	3				IIIG
			WEIS				1357.0	1357.3	3				DCIM
			WEIS				1358.9	1359.4	3				IIIGDCIM
	2031	2400	CULG	2052.0		1	2052.0		1				IIIB
			CULG				2134.5	2135.0	3				IIIG
			CULG	2211.5	2212.0	1							IIIG
19	0000	0731	CULG				0105.0	0105.5	1				IIIG
			CULG				0215.5	0219.5	1				IIIS
			CULG				0217.5	0219.0	2	0217.5	0219.5	1	IIIG
			CULG				0237.0	0445.5	1				IIIG,N
			CULG	0306.5	0340.5	1							IIIN
			CULG	0315.5	0534.5	1							IN
			CULG				0318.5	0319.0	3				IIIG
			BLEN				0522.5	1318.0	1				IN
			CULG	0531.0	0531.5	3	0531.0	0532.0	3				IIIG
	0502	1755	BLEN	0531.2	0534.5	3	0531.2	0534.8	3				IIIGG,V
			CULG				0554.0	0716.0	1				CONT
	0555	0846	WEIS				0636.6	0636.7	1				IIIB
	0851	1256	WEIS				0702.6	0702.7	1				IIIB
			BLEN	0756.4	0756.6	1							IIIG
	1259	1740	WEIS				0916.8	0916.9	1				IIIB
			BLEN	0924.3	0924.6	1							IIIG
			BLEN	0956.3	0956.4	2							IIIB,U
			WEIS				0956.3	0956.7	2				IIIG
			WEIS				1002.4	1004.6	2				IIIG
			BLEN	1019.6	1019.8	1							IIIG
			BLEN	1054.3	1054.4	2							IIIG,DCIM
			BLEN				1102.9	1103.4	2				IIIG
			WEIS				1103.3	1103.9	2				IIIG
			BLEN	1123.1	1156.0	2	1123.1	1156.0	3				IIIGG
			WEIS				1128.5	1128.7	2				IIIG
			WEIS				1141.4	1141.5	2				IIIB
			BLEN				1219.0	1219.4	3				IIIG
			BLEN	1245.2	1245.8	2							IIIG
			BLEN				1316.6	1317.4	2				IIIG
			SGMR				1432.6	1433.3	1				V
			WEIS				1432.6	1433.2	2				IIIG
			BLEN	1508.8	1508.9	2							DCIM
			SGMR				1617.6	0000.0	1				CONT
			SGMR				1655.8	1658.1	1				V
			PALE				1746.1	1746.6	2				III
			SGMR				1746.1	1818.5	1				GG
			PALE				1816.6	1817.6	2				III
			PALE				1857.5	1858.6	2				V
			SGMR				1857.5	1859.1	1				V
			PALE				1918.6	2330.0	2				CONT
			SGMR				1918.6	1919.5	1				V
			SGMR				1947.5	1954.5	1				V
			PALE				1952.5	1954.1	3				V
			SGMR				2018.1	2027.8	1				V
	2031	2400	CULG				2125.5	2127.0	2				IIIB,V
			CULG				2156.5	2159.5	3				IIIG,V
			PALE				2156.6	2158.1	2				V
			SGMR				2156.6	2158.3	1				V
			CULG				2244.5		1				IIIB,U
			CULG	2255.5	2257.0	1							IS
20			LEAR				0010.8	0011.5	2				III
	0000	0730	CULG	0011.0	0011.5	3	0011.0	0011.5	3				IIIG
			PALE				0011.1	0011.3	3				III

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20			LEAR				0029.3	0034.5	1				III
			PALE				0029.3	0033.8	2				III
			CULG				0029.5	0030.0	2				POSS II
			LEAR				0114.8	0115.3	1				III
			PALE				0115.1	0115.3	2				III
			CULG	0115.5			0114.5	0115.0	2	0115.0	0115.5	1	IIIG
			CULG	0156.5	0604.0	1							IN
			LEAR				0303.0	0309.0	1				III
			CULG				0303.5		1	0303.5		1	IIIB
			CULG				0456.5	0722.0	3				IIIG,V,N
			LEAR				0456.6	0500.1	1				III
			CULG	0513.5		2							IIIB
			LEAR				0536.3	0536.8	1				III
	0501	1318	WEIS				0536.3	0536.9	2				IIIG
	0502	1203	BLEN				0545.0E	1203.0D					IN
			LEAR				0545.8	0549.1	2				III
	1424	1615	WEIS				0546.3	0549.2	3				IIIG
			BLEN				0654.5	0705.6	3				IIIGG
			LEAR				0654.6	0701.6	2				III
	1623	1741	WEIS				0654.7	0656.6	3				IIIG
			WEIS				0700.4	0701.6	3				IIIG
			CULG	0705.0	0705.5	2	0705.5		2				IIIG,U
			WEIS				0705.3	0705.6	2				IIIGDCIM
			WEIS				0711.2	0712.3	1				IIIG
			LEAR				0720.5	0722.1	2				III
			WEIS				0720.6	0722.3	3				IIIG
			WEIS				0724.2	0725.2	2				IIIG
			WEIS				0744.4	0746.7	2				IIIG
			LEAR				0746.0	0951.0	1				CONT
			WEIS				0750.6	0750.9	3				IIIG
			WEIS				0751.3	0757.3	3				IIIG
			BLEN				0756.3	0756.5	3				IIIG
			WEIS				0802.0	1207.0	2				IIIS
			BLEN				0818.9	0819.6	3				IIIG
			WEIS				0818.9	0820.1	2				IIIG
			BLEN				0854.5	0855.1	3				IIIG
			WEIS				0854.6	0855.3	3				IIIG
			BLEN	0913.5	0913.6	3							DCIM
			WEIS				1037.1	1037.6	2				IIIG
			WEIS				1042.6	1042.8	1				IIIG
			SGMR				1056.6	1057.0	1				III
			WEIS				1056.7	1057.3	3				IIIG
			SGMR				1141.5	1143.6	1				V
			WEIS				1141.6	1143.7	3				IIIGG
			BLEN	1142.4	1142.8	3							IIIG
			WEIS				1142.4	1142.6	3				DCIM
			WEIS				1220.4	1228.8	3				IIIGG
			WEIS				1231.3	1231.5	1				IIIB
			WEIS				1244.8	1244.9	2				IIIB
			WEIS				1256.7	1257.1	2				IIIG
			SGMR				1411.6	1414.1	2				V
			WEIS				1427.7	1428.0	2				IIIG
			WEIS				1445.6	1446.0	2				IIIG
			WEIS				1449.2	1449.3	1				IIIB
	1507		WEIS				1507.7	1507.9	1				IIIBU
			PALE				1900.5	1901.1	1				III
	2031	2400	CULG	2044.5	2137.0	1							IN
			CULG				2052.0	2053.0	1				IIIG
21	0000	0731	CULG	0038.0	0038.5	3				0038.0	0038.5	3	IIIG
			CULG	0147.0	0147.5	2	0146.5	0148.0	2				IIIG
			PALE				0147.1	0148.6	2				III
			CULG	0258.5		2	0258.5		2				IIIB
			CULG				0350.5		1				IIIB,U
			CULG	0431.5	0432.0	1	0431.5	0432.0	2				IIIG
			CULG				0514.5		1				IIIB
			CULG	0646.5	0647.5	3	0647.0	0648.0	3				IIIG,V,U
			LEAR				0647.0	0648.3	2				III
	0549	0709	WEIS				0647.2	0648.1	3				IIIG
			CULG	0652.0	0720.0	1							IIIN
			CULG				0654.5	0655.0	2				IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

APRIL 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
21			LEAR				0654.6	0655.8	1				III
	0739	1213	WEIS				0654.7	0655.9	3				IIIG
	1240	1325	WEIS				0657.4	0657.7	1				IIIG
			CULG				0722.0		1				IIIB
			LEAR				0858.8	0859.1	1				III
	1522	1744	WEIS				0858.9	0859.3	3				IIIG
			WEIS				1256.1	1257.9	3				DCIM
	2031	2400	CULG	2053.0	2336.5	1							IN
			CULG				2053.5	2104.5	2				IIIN
			CULG	2055.5	2056.5	2	2055.5	2057.0	3				IIIG,V
			PALE				2156.5	2157.1	1				V
22	0000	0730	CULG				0301.5	0311.5	2				IIIS
			LEAR				0301.6	0312.1	1				G
			PALE				0303.6	0311.6	2				III
			CULG	0339.0	0341.0	1							IS
			CULG				0415.0	0415.5	3				IIIG,V
			LEAR				0415.3	0415.6	1				III
	0528	0504	WEIS				0523.8	0524.4	3				IIIG
			LEAR				0533.6	0534.6	1				III
			CULG	0534.0		1	0533.5	0534.5	3				IIIG
			CULG	0554.5		2							IIIB
			CULG	0624.0	0624.5	2							IIIG
	0619	0725	WEIS				0624.2	0624.4	3				DCIM
			LEAR				0639.8	0640.1	1				III
			CULG				0640.0		2				IIIB
			CULG	0648.0	0708.0	1							IN
	0741	0833	WEIS				0648.3	0648.4	3				DCIM
	0848	0934	WEIS										
	1038	1654	WEIS										
	1711	1743	WEIS										
	2030	2400	CULG	2133.0	2159.0	1							IS
23			CULG				0020.0	0624.5	1				IN
	0000	0730	CULG				0404.5	0405.0	2				IIIB,U
			LEAR				0404.6	0405.1	1				III
			CULG				0416.0		1				IIIB,U
			CULG				0600.5	0634.0	1				IN
			LEAR				0736.8	0738.5	1				III
	0756	1623	WEIS				0923.4	0923.7	1				IIIG
	1724	1735	WEIS				0925.7	0925.8	1				IIIB
			WEIS				1320.3	1320.7	1				IIIB
			WEIS				1425.8	1425.9	1				DCIM
			WEIS				1426.0	1426.5	1				IIIG
			WEIS				1427.6	1427.8	1				IIIB
			WEIS				1431.6	1432.4	3				IIIG
			SGMR				1432.0	1432.3	1				V
	2030	2400	CULG										
			CULG	2212.0	2333.0	1	2212.0	2337.5	1				IIIN
24	0000	0730	CULG	0035.0	0108.0	1							IS
			CULG				0414.0	0633.0	1				IN
			LEAR				0604.1	0604.3	1				III
	0736	1745	WEIS				1140.3	1140.6	1				IIIB
			SGMR				1654.0	1657.6	1				G
			WEIS				1654.1	1658.6	2				IIIG
			CULG				2100.0	2127.0	1				IS
	2030	2400	CULG				2126.0	2127.0	1				IIIG
			CULG				2238.5		1				IIIB
25	0000	0725	CULG				0418.5		2				IIIB
			LEAR				0746.1	0755.3	1				III
	0453	1346	WEIS				0746.1	0747.4	3				IIIG
	1340	1723	WEIS				0752.8	0756.7	3				IIIGG
			WEIS				0806.4	0807.0	1				IIIG
	1734	1747	WEIS				0949.7	0949.9	2				IIIG
			WEIS				0952.4	0952.6	2				IIIB
			WEIS				1235.8	1235.9	1				IIIB
			WEIS				1601.0	1601.6	1				IIIG
			WEIS				1620.7	1620.9	2				IIIB
			PALE				2027.0	0000.0	2				CONT

APRIL 1983

Day	Observation Start (UT)	Observation End (UT)	Sta	Decimetric Band Start (UT)	Decimetric Band End (UT)	Decimetric Band Int (1-3)	Metric Band Start (UT)	Metric Band End (UT)	Metric Band Int (1-3)	Dekametric Band Start (UT)	Dekametric Band End (UT)	Dekametric Band Int (1-3)	Spectral Type
25	2031	2400	CULG				2035.0	2400.0	1				IS,C,DC
			SGMR				2039.3	2122.5	1				CONT
26	0000	0729	CULG				0000.0	0020.0	1				IS
			LEAR				0142.8	0143.3	1				III
			CULG				0143.0		2				IIIG
	0451	1749	WEIS				0753.2	0753.3	3				IIIB
			WEIS				0758.6	0758.7	2				IIIB
			WEIS				0806.4	0807.0	1				IIIG
			WEIS				0810.7	0820.2	3				IIIGGDCIM
			LEAR				0811.1	0817.1	3				III
	2030	2400	CULG	2038.0	2348.0	1							IN
			PALE				2300.1	2300.3	2				III
			CULG	2333.5	2338.5	1							CONT
			CULG	2337.5	2338.0	2							IIIG
			CULG				2357.5		1				IIIB
27	0000	0729	CULG	0033.0	0404.5	1	0412.5	0521.5	1				IN
	0802	1844	WEIS										
	0546	0757	WEIS				1152.1	1153.0	1				IIIG
	2030	2400	CULG	2150.5	2342.5	1							IN
			CULG				2231.5	2232.5	2				IIIG
28	0000	0729	CULG	0008.0	0606.1	1							IN
			PALE				0301.6	0303.8	2				III
			PALE				0305.1	0307.0	2				III
	0450	1351	WEIS				1041.0	1044.5	1				I
	1356	1507	WEIS				1140.1	1141.0	3				DCIM
	1543	1734	WEIS				1606.2	1606.9	2				IIIG
			SGMR				1606.3	1607.0	1				V
	2030	2400	CULG	2037.0	2341.0	1	2117.5	2226.0	1				IN
			CULG				2117.0	2227.0	1				II N
29	0000	0729	CULG	0200.5	0300.0	1	0115.0	0644.0	1				IN
			CULG	0300.0	0407.0	1							IS
	0448	1752	WEIS										
	2052	2400	CULG				2357.0		1				IIIB
30			LEAR				0053.3	0053.6	1				III
			PALE				0053.3	0053.6	2				III
	0000	0714	CULG				0053.5		1				IIIB
			CULG				0352.5	0353.0	2				IIIG,U
			CULG				0403.0	0531.0	1				IIIN
			CULG				0517.5		2				IIIB,U
			LEAR				0642.6	0642.8	1				III
			LEAR				0702.0	0702.5	1				III
			LEAR				0825.6	0826.1	1				III
	0446	0756	WEIS				0825.8	0826.2	2				IIIBU
	0802	1753	WEIS				1005.4	1005.7	2				IIIB
			WEIS				1008.7	1008.8	1				IIIB
	2029	2400	CULG										
			CULG				2237.5	2238.0	2	2237.5	2238.0	1	IIIG

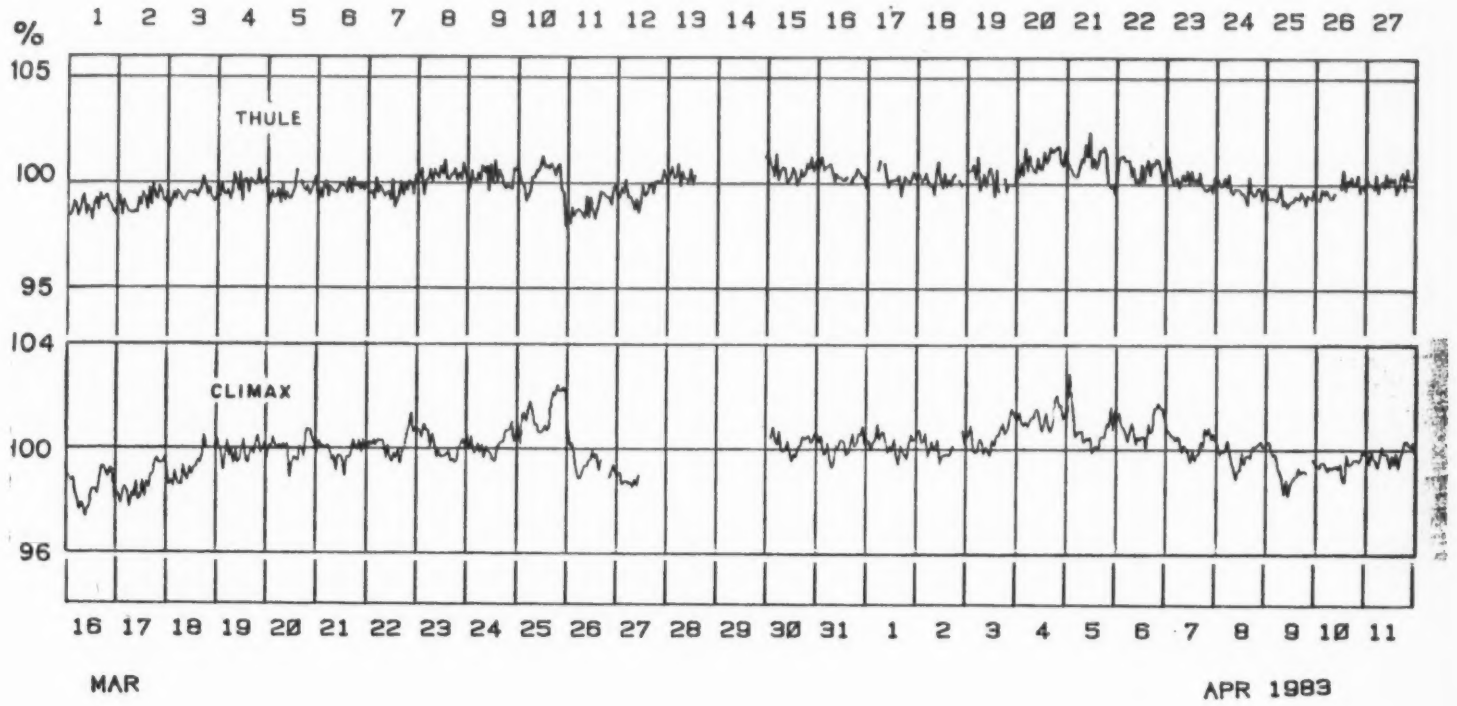
The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

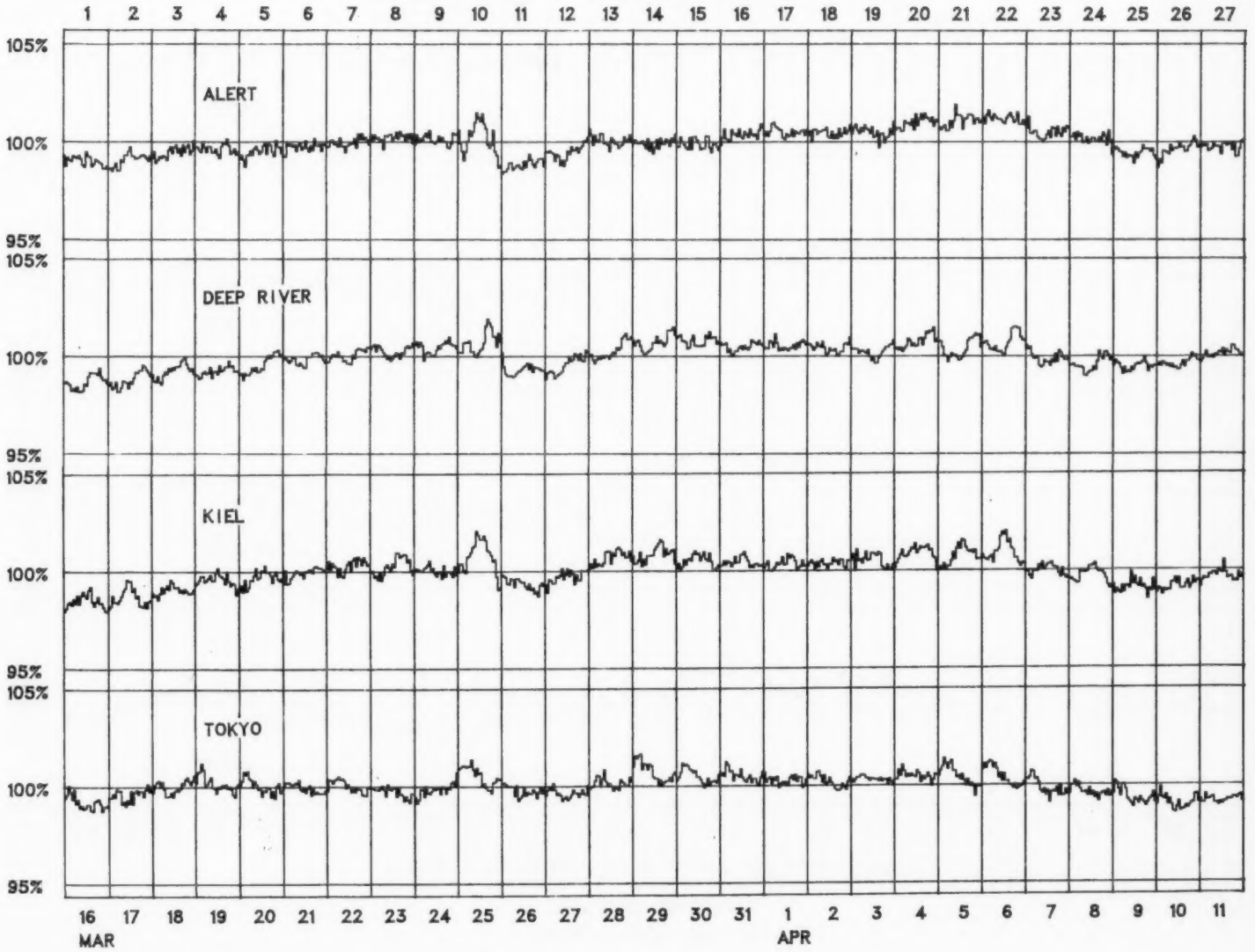
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2045 (March 1983–April 1983)



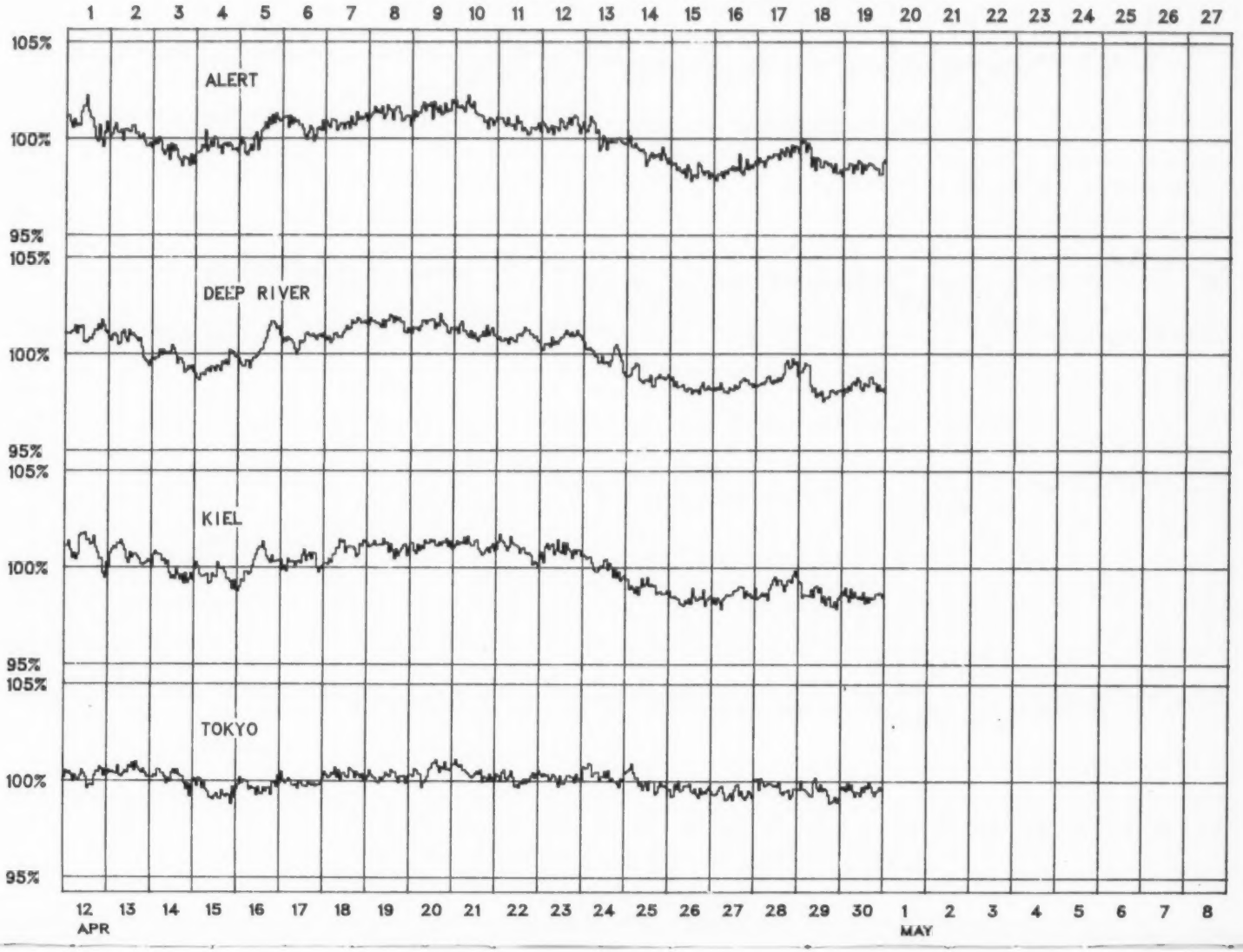
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2045 (March 1983–April 1983)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2046 (April 1983–May 1983)



COSMIC RAY INDICES
(Neutron Monitor)

April 1983

Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/100
1	4107	6750.8	6390.5	5771.6	3742.3	3570.0
2	4103	6748.5	6383.6	5772.2	3739.3	3567.7
3	4106	6750.2	6370.3	5781.3	3753.8	3571.3
4	4141	6784.0	6404.0	5801.3	3781.0	3577.3
5	4131	6788.1	6381.3	5792.6	3764.5	3576.0
6	4128	6796.3	6401.2	5804.7	3768.3	3575.9
7	4104	6750.4	6349.8	5750.8	3745.0	3555.1
8	4086	6728.4	6330.7	5735.3	3729.4	3547.2
9	4069	6679.8	6323.9	5700.4	3707.1	3538.1
10	4089	6692.7	6334.3	5703.5	3714.1	3526.6
11	4102	6701.3	6365.2	5731.6	3728.6	3531.6
12	4096	6711.1	6370.8	5736.7	3738.2	3541.5
13	4095	6670.2	6336.1	5719.9	3721.8	3550.7
14	4056	6608.5	6283.7	5678.5	3691.5	3538.5
15	4046	6629.3	6258.3	5659.7	3676.3	3513.5
16	4075	6673.6	6321.9	5694.3	3699.8	3522.4
17	4082	6697.6	6345.3	5700.0	3706.7	3528.3
18	4093	6713.8	6377.5	5732.7	3715.1	3544.6
19	4116	6742.9	6400.0	5743.2	3745.0	3540.4
20	4112	6757.5	6392.5	5751.1	3744.9	3550.7
21	4105	6746.0	6367.9	5747.0	3741.9	3548.6
22	4070	6701.6	6353.4	5736.0	3735.4	3537.3
23	4076	6703.1	6346.8	5733.6	3715.0	3539.2
24	4051	6661.7	6289.8	5684.3	3684.5	3543.1
25	4018	6607.6	6224.5	5624.6	3639.8	3532.5
26	3986	6544.3	6189.6	5592.0	3612.9	3517.1
27	3979	6549.8	6193.5	5601.3	3616.3	3510.7
28	4009	6600.1	6228.0	5629.5	3635.6	3522.7
29	4013	6580.6	6192.4	5600.9	3623.6	3513.6
30	4002	6559.7	6194.8	5600.7	3622.9(24)	3518.1
Mean	4075	6687.7	6323.4	5710.4	3709.3	3541.7

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

GEOMAGNETIC ACTIVITY INDICES

APRIL 1983

Day		Kp Three-Hourly Indices 1 2 3 4	5 6 7 8	Sum	Ap	Cp	Km Three-Hourly Indices 1 2 3 4	5 6 7 8	Am	aa N	S	M
1		2+ 4- 4- 3+	3- 5- 4 3	27+	20	1.0	2- 3 3+ 4-	3- 4- 3+ 3	32	32	33	28 38
2		4- 3- 3+ 3-	3 3 3 3+	25-	16	0.9	3 3- 3- 2+	3 3+ 3+ 3+	29	36	21	26 31
3	Q0A	4- 4 2+ 3	4- 2- 1 3+	23-	15	0.9	3 3+ 2+ 2	3 2- 1- 3	22	35	19	24 30
4		2 4 2+ 3-	3- 4- 4 3	24+	16	0.9	2- 3 2 3+	3- 4- 4- 3	29	30	31	21 41
5		5+ 3+ 3- 2+	3+ 3- 2- 1+	23-	17	0.9	5- 3 2+ 2+	3 3- 2 1+	28	27	25	30 23
6	D5	4- 4 4+ 5-	6- 4+ 5- 4-	35	35	1.4	3+ 3+ 3+ 4+	5- 3+ 4 3+	48	54	49	46 57
7		4- 4+ 4- 5+	5+ 4 4 4+	35-	34	1.4	3 4- 3+ 4+	4+ 4- 4- 4	49	54	47	44 57
8		4+ 4+ 4+ 3	5 4- 3- 2+	30-	25	1.2	4- 4- 4- 2+	4+ 4- 3- 2+	39	42	36	36 42
9		3 3 3+ 3-	3 5- 3+ 4-	27-	19	1.0	3- 3- 3 3	3- 4 3 3+	31	32	28	22 39
10		4 4 5- 3+	3 3+ 3+ 3+	29	22	1.1	4- 3+ 4 3+	3 3- 3 3	36	42	36	41 36
11	Q1A	2+ 3 3 2-	1- 1- 2- 1+	14+	8	0.4	2 2+ 3- 1+	1- 1- 2- 2-	13	13	10	15 8 C
12	Q4A	3 3- 2- 4-	2+ 3- 2+ 2-	20	11	0.7	3- 2+ 2- 3+	3- 2+ 3- 2+	21	18	18	20 17
13		5- 5 3 6	5 4- 3+ 3+	34	36	0.4	4 4 3 5	5- 3 3+ 3	49	62	45	64 44
14	D3	4 5- 5- 4+	4+ 5+ 6 5+	39-	45	1.5	4- 4- 4 4+	4 5- 5+ 5-	66	76	76	50 103
15	D2	7- 5+ 6 5-	5+ 5- 6- 4	42+	59	1.7	6- 4 5- 4+	5- 4 5- 4	76	83	61	79 65
16		5 4+ 4- 4	4+ 4+ 4- 5	34+	33	1.3	4 3+ 3+ 4	4- 4- 3 4	46	45	36	36 45
17		3+ 3+ 3+ 3	2 4 4+ 3+	27-	19	1.0	3- 3- 3 3-	2 3+ 4 4-	32	32	25	24 34
18	Q3A	3 3 2- 2-	3- 3 3 2-	20-	11	0.6	3- 2+ 2- 2-	2+ 3 3- 2	19	24	21	19 26
19	Q2A	1- 2 2+ 3	2+ 3- 3- 2	18-	9	0.5	1- 2+ 3- 3+	2+ 3- 2+ 2	20	19	19	16 23
20	Q7A	4 3+ 2 3-	2 2+ 3 2+	22-	13	0.7	3 3- 2+ 3-	3 2+ 3 2+	25	25	24	22 27
21	Q6A	3+ 4- 2+ 2-	2 2- 3- 3+	21-	12	0.7	3- 3- 2+ 2-	2- 1+ 3- 3	20	24	13	18 19
22	Q9A	4+ 4 4 4+	1+ 1+ 0+ 1	21-	17	0.9	4- 3+ 4- 4+	1+ 1+ 0+ 1	26	26	26	43 10
23		4- 4- 3 2	2 2+ 2 5	24-	17	0.9	3 3 3 3-	2 2 2 5-	29	31	19	23 28
24	D1	5- 5+ 5- 5	6- 6- 6+ 6	43+	61	1.7	4- 5- 4 5-	5 4+ 5 5-	74	74	64	55 84
25		5- 4 3 4	4- 4+ 5- 5+	34-	32	1.3	4+ 4- 3- 3+	3- 4 4 5-	49	47	39	33 53
26		5 4+ 5- 3	4- 4 3- 4+	32-	28	1.2	4+ 3+ 4+ 3	4- 4- 2+ 4-	43	42	42	41 43
27	Q8A	4 4- 3 2	3- 3- 2 2+	22+	14	0.8	4- 4- 3- 2	2+ 3- 2+ 2+	25	26	23	29 20
28	Q5A	3+ 4- 3- 2	3 2- 2 2	20+	12	0.7	3 3+ 3- 2-	3- 1+ 2 2	21	26	13	22 17
29	D4	4- 3 4- 3+	5 6 6- 5-	35	39	1.4	3 3 4- 3+	4+ 5 5- 4+	56	52	42	34 60
30		4 4+ 4+ 3+	4 4 4 3+	31+	26	1.2	4- 4+ 4+ 3	3 3+ 3+ 3	43	40	29	36 33
Mean					24	1.04			36.5	39.0	32.3	35.7

Day	Kn Three-Hourly Indices 1 2 3 4	5 6 7 8	An	Ks Three-Hourly Indices 1 2 3 4	5 6 7 8	As
1	2- 3 4- 4-	2+ 4- 3+ 3-	33	2 3- 3+ 3+	3- 4- 3+ 3	32
2	3 2+ 3 2+	3+ 4- 4- 3	31	3 3 2+ 2+	3- 3 3 3+	27
3	3 3+ 2+ 2+	3 2- 1+ 3	23	3- 3 2+ 2	3 2 0+ 3-	20
4	1+ 3 2- 3	3- 4- 4- 3	29	2 3 2+ 3+	3- 4- 4- 3-	29
5	5- 3 3- 3-	3 3 2+ 1+	28	5 3- 2 2	3 2+ 2- 1	28
6	3+ 3+ 3+ 4+	5- 4- 4 3+	49	3+ 3+ 4- 4	5- 3 4 3	46
7	3 4- 3 4+	4+ 4 4- 4	48	3 4- 3+ 4+	4+ 4- 4- 4+	49
8	4- 4- 4- 3-	4+ 4- 3 3-	39	4- 4- 4- 2	5- 4- 2+ 2	38
9	2+ 3- 3 3	3 4+ 3+ 3	32	3- 3- 3- 3	3- 4- 3 3+	30
10	4 4- 4+ 3+	3 3 3 3	39	3+ 3+ 4- 3+	3- 3- 3 3+	34
11	2 3- 3- 2-	1 1 2+ 2	14	2 2 3- 1+	0+ 0+ 1 1+	11
12	3- 2 2- 4-	3- 3- 3- 2+	23	3- 2+ 1+ 3	2+ 2+ 2 2	19
13	4 4 3- 5	4+ 3+ 3+ 3+	51	4 4 3 5-	5 2+ 3 3	48
14	3+ 4- 4- 4	4 5 5 4+	62	4 3+ 5- 5-	4 5- 6- 5-	70
15	6- 4+ 5 4+	5- 4- 5- 4-	76	6- 4- 5- 4	5- 4 5- 5-	75
16	4 3+ 3+ 4-	4 4- 3+ 4	46	4 4- 3+ 4	4- 3+ 3 4+	45
17	3- 3 3 3-	2+ 3+ 4- 3	30	3 3- 3 3-	2 3+ 4+ 4	34
18	3- 3- 2- 2-	3- 3- 3- 2+	20	3- 2+ 2- 1+	2 3 3- 2-	18
19	1- 2 3- 3-	2+ 3- 3- 2+	18	1- 3- 3 4-	2+ 3- 2 2-	21
20	3 3- 2+ 3-	3- 2 3 2+	23	3+ 3 2+ 2+	3+ 3- 3 2+	26
21	2+ 3- 2 2-	2- 2- 3- 3	19	3- 3- 3- 2-	1+ 1 3 3	20
22	3+ 3 4- 4	2- 1+ 1- 1+	27	4- 3+ 4- 5-	1 1 0+ 0+	26
23	3 3 3- 2+	2+ 3- 3- 4+	30	3 3- 3 3-	1+ 1+ 2- 5-	28
24	4 5- 4 5-	5- 4+ 5 5-	72	4- 5- 4 4+	5 4+ 5 5	75
25	4 4- 2+ 3+	3 4 4 4+	46	4+ 4 3- 4-	3- 4 4+ 5-	52
26	4 3+ 4+ 3	3+ 4- 2+ 4-	41	5- 4- 4+ 3	4- 3+ 2+ 3+	44
27	4- 4- 3- 2	2+ 3 2 3-	26	3+ 4- 3- 2	2 2 2+ 2+	23
28	3- 3+ 3- 2	3 2- 2+ 2+	23	3 3+ 3 1+	3- 1- 2- 2-	19
29	3- 3 4- 4-	4+ 5+ 4+ 4	54	3+ 3 4 3	4+ 5 5- 4+	59
30	3+ 4+ 4 3	3+ 4- 4- 3	43	4 4+ 4+ 3+	3- 3+ 3+ 3	44
Mean			36.5			36.3

NOTE: All aa indices are provisional from 1 January 1981 until further notice, because of the change in the Southern Hemisphere observatory.

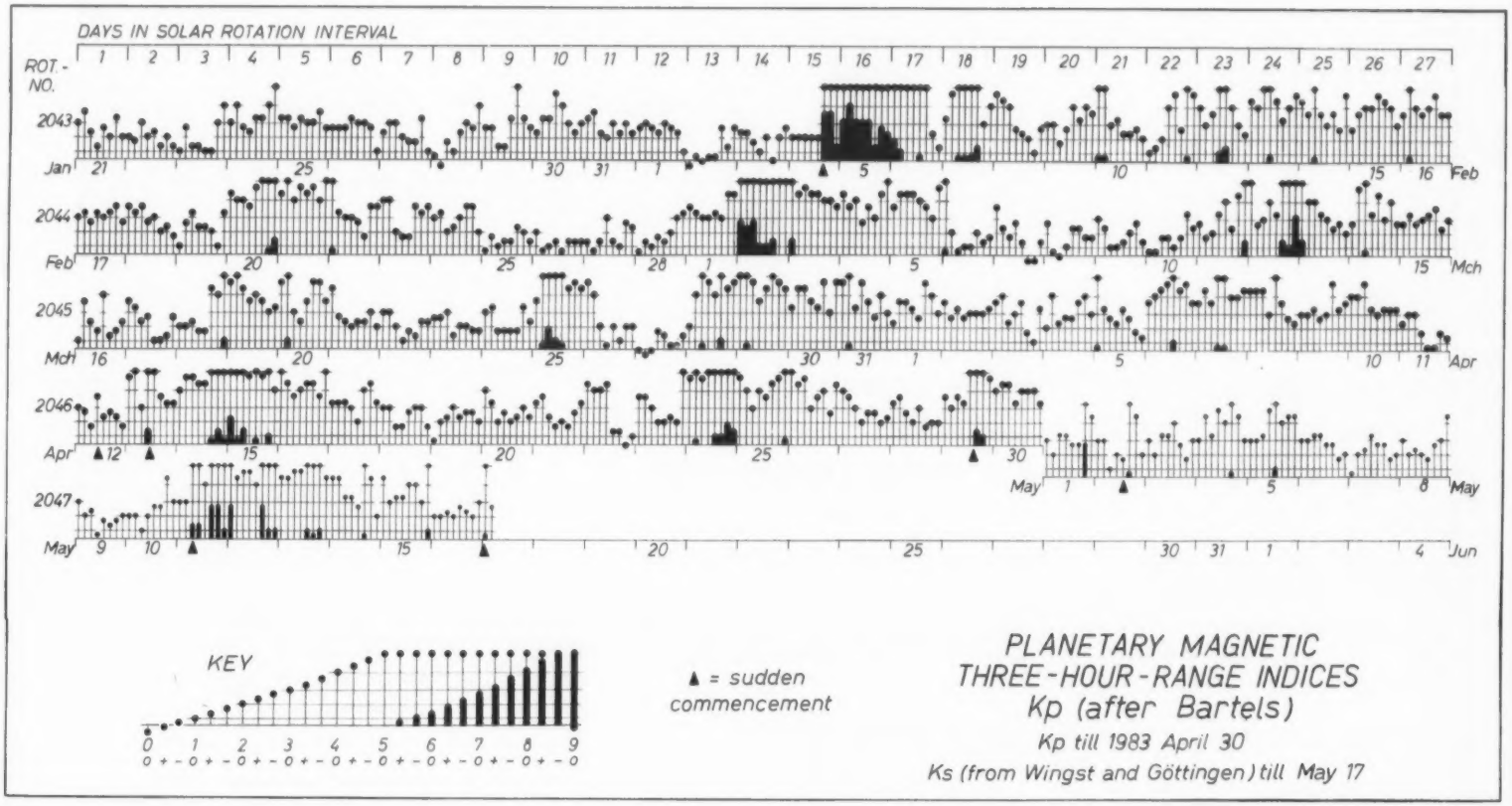
The Geophysikalisches Institut, University of Goettingen, prepares the quiet (Q) and disturbed (D) days, geomagnetic planetary 3-hour-range indices (Kp), magnetic character figures (Cp) and average amplitude (Ap). The 10 most quiet days [Q1-Q0(10)] and the five most disturbed days (D1-D5) are ordered from most quiet and from most disturbed, respectively. A or K means "not really quiet" (A implies Ap>6 and K implies Ap<6 with either one Kp>30 or two Kp values >3-). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic 3-hour indices Km, Kn, Ks and daily mean values Am, An, As and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices, daily north (N) and south (S) values and half-daily antipodal mean (M) values are given. C indicates really quiet 24- and 48-hour intervals centered on 1200 UT; K indicates similar periods with some slightly disturbed 3-hour intervals.

DAILY AVERAGE INDICES A_p

DAY	1982 MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	1983 JAN	FEB	MAR	APR
1	22	20	18	12	9	28	36	2	11	11	21	20
2	30	18	10	55	12	24	32	4	7	5	86	16
3	45	9	6	26	21	10	21	9	11	7	36	15
4	19	7	2	15	32	10	8	13	9	59	26	16
5	14	6	4	18	39	9	9	11	6	143	28	17
6	6	14	15	25	199	19	11	3	3	47	12	35
7	4	14	21	107	88	35	4	29	4	43	7	34
8	5	9	15	6	12	21	12	27	9	18	6	25
9	8	16	10	23	50	6	8	18	20	18	8	19
10	5	51	10	27	10	15	11	46	78	23	7	22
11	9	32	36	28	13	14	20	20	11	24	24	8
12	6	59	48	22	14	15	16	14	18	33	53	11
13	6	62	144	10	15	34	18	6	8	35	24	36
14	8	24	153	7	14	30	12	8	8	28	26	45
15	20	26	36	3	12	8	13	11	22	25	15	59
16	10	10	50	6	12	14	9	13	25	30	11	33
17	12	6	24	16	11	21	6	62	25	16	11	19
18	20	7	24	16	30	23	12	41	32	14	20	11
19	12	24	28	10	28	17	10	34	17	10	28	9
20	8	18	24	12	24	14	6	46	14	41	32	13
21	8	9	11	15	76	11	25	37	12	36	12	12
22	4	20	16	24	135	8	30	42	8	21	9	17
23	2	20	12	17	26	5	36	26	10	17	9	17
24	4	21	50	18	22	5	83	19	22	14	10	61
25	8	17	22	20	13	15	54	14	16	6	50	32
26	24	16	27	20	84	30	26	9	12	5	13	28
27	54	32	27	11	42	16	17	18	10	7	3	14
28	56	27	21	12	14	10	28	21	10	8	37	12
29	35	19	22	38	9	35	32	20	16		40	39
30	35	39	23	28	12	27	13	15	19		27	26
31	31		25	16		34		7	13		28	
MEAN	17	22	30	21	36	18	21	21	16	27	23	24

GEOMAGNETIC ACTIVITY INDICES



PRINCIPAL MAGNETIC STORMS

APRIL 1983

Sta	Geomag Lat	Commencement Day	Time (UT)	Type	SC Amplitudes D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	Ranges K	D (Min)	H (Gamma)	Z (Gamma)	End Day	Hour (UT)
HYB	07.6N	04	1200	..	..	..	..	05(2)	4	5	96	25	05	20
GUA	04.0N	04	1421	..	..	..	..	05(1)	5	--	110	30	05	19
KGL	56.5S	04	1330	..	..	..	..	04(5,6)	5	44	120	160	05	16
FRD	49.6N	05	----	..	..	..	..	05(1) 08(5) 10(1)	5	26	109	51	11	--
COL	64.6N	06	0005	SC*	- 6	30		07(4) 08(5)	7	209	1740	1040	09	00
SIT	60.0N	06	05--	..	..	..	..	06(5)	7	50	--	630	08	14
HYB	07.6N	06	0000	..	..	..	..	06(5) 07(4) 08(5)	5	5	151	35	08	21
GUA	04.0N	06	0015	..	..	..	..	06(4)	5	--	150	30	06	20
CNB	43.9S	06	01--	..	..	..	..	06(4,5) 07(4) 08(5)	5	21	106	57	08	18
KGL	56.5S	07	0742	SC	6	20	4	07(6,7) 08(5,6)	4	10	80	40	09	01
HER	33.7S	08	18--	..	..	..	..	08(7,8,)	5	10	91	44	09	03
HYB	07.6N	09	0600	..	..	..	..	09(6) 10(2,3)	4	4	86	26	10	23
SIT	60.0N	12	08--	..	..	..	..	15(3)	8	--	--	--	17	09
FRD	49.6N	12	1055	SC	2	7	- 2	13(4)14(7,8)15(1,2,3) 16(1)	5	24	153	86	18	--
HYB	07.6N	12	1056	SC	- 0.2	9	- 1	12(4,6) 13(2)	3	6	74	28	13	09
KGL	56.5S	12	1055	SC	5	25	5		6	82	360	385	16	09
COL	64.6N	13	00--	..	..	..	..	13(5) 15(3) 16(4)	7	234	1470	1090	18	05
WIT	54.2N	13	1100	SC*	104 *	- 6 *	0	15(7)	7	42	265	120	16	20
BJI	28.5N	13	1100	SC	1.5	31	2	13(4)	6	13	119	35	15	24
HON	21.1N	13	1100	SC		44	19	13(4,5)	5	7	56	35	13	23
HYB	07.6N	13	1100	SC	- 0.9	45	- 4	13(4) 14(6)	6	7	127	45	15	22
GUA	04.0N	13	1100	SC		25	- 9	13(4)	6	--	100	20	13	23
PMG	18.6S	13	1100	SC	0.5	51	42	13(4)	6	6	130	80	16	00
HER	33.7S	13	07--	..	..	..	..	13(4) 14(7) 15(1,7)	5	34	124	102	15	22
GNA	43.2S	13	1200	SC	1.9	28	10	14(4) 15(1,5)	6	18	120	120	16	23
CNB	43.9S	13	1100	SC*	- 1.9*	61	12	15(1)	6	20	234	52	17	00
KGL	56.5S	13	1005	SC	3	30	10	14(7)	6	82	360	385	16	09
KGL	56.5S	13	1059	SC	14	70	10	15(7)	6	82	360	385	16	09
GUA	04.0N	14	1506	..	..	..	..	15(1)	5	--	160	30	15	18
GUA	04.0N	22	0548	..	..	..	..	22(4)	5	--	90	20	22	17
COL	64.6N	23	20--	..	..	..	..	24(4)	7	214	1450	850	27	17
WIT	54.2N	23	2100	..	..	..	..	23(8) 24(7,8)	6	34	225	115	26	02
FRD	49.6N	23	----	..	..	..	..	23(8) 24(1,2,5,6,7,8) 25(1,8) 26(1,3)	5	24	127	101	27	--
BJI	28.5N	23	20--	..	..	..	..	24(2)	6	13	136	41	26	20
HYB	07.6N	23	1400	..	..	..	..	24(2,4,5)	6	6	189	40	26	19
PMG	18.6S	23	21--	..	..	..	..	24(4,5)	5	4	180	60	26	00
HER	33.7S	23	21--	..	..	..	..	23(8) 24(7,8) 25(8)	5	27	142	100	26	03
GNA	43.2S	23	21--	..	..	..	..	24(5,7)	6	19	120	140	26	16
CNB	43.9S	23	21--	..	..	..	..	24(4,5,7)	5	17	110	50	26	16
SIT	60.0N	24	00--	..	..	..	..	25(4)	7	140	--	610	27	08
GUA	04.0N	24	0017	..	..	..	..	24(4)	5	--	130	30	25	08
COL	64.6N	29	03--	..	..	..	..	29(5) 30(3)	7	163	1310	980	01	14
SIT	60.0N	29	05--	..	..	..	..	30(3)	6	--	450	530	02	02
WIT	54.2N	29	1400	..	..	..	..	29(6)	6	26	186	110	30	02
FRD	49.6N	29	00--	..	..	..	..	29(5,6) 30(2,3) 01(7)	5	22	158	105	06	--
HYB	07.6N	29	0000	..	..	..	..	29(6)	6	5	163	34	30	23
HER	33.7S	29	00--	..	..	..	..	29(6)	5	19	115	97	30	03
KGL	56.5S	29	1458	SC				29(5,6,7)	7	--	--	--	30	12

ABG	ALIBAG	GNA	GNANGARA	HYB	HYDERABAD	SHL	SHILLONG
ANN	ANNAMALAINAGAR	GUA	GUAM	IRK	IRKUTSK	SIT	SITKA
BJI	BEIJING	HER	HERMANUS	JAI	JAIPUR	TRD	TRIVANDRUM
CNB	CANBERRA	HON	HONOLULU	KGL	KERGUELEN	UJJ	UJJAIN
COL	COLLEGE	HUA	HUANCAYO	PMG	PORT MORESBY	WIT	WITTEVEEN
FRD	FREDERICKSBURG						

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

APRIL 1983

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)

12	10 55	A: COI MPO; B: DOB WNG DOU AQU EBR SPT FRD LNP AMS KGL; C: NGK VAL HAD CLF GCK CZT
13	10 05	A: COI; C: AMS CZT KGL (si: A: DOU; C: EBR - bps: A: MPO - sfe: CLF)
13	11 00	A: WNG DOU CLF AQU COI PMG MPO KGL; B: NGK VAL HAD BDV MMB GCK EBR SPT KAK KNY LNP GNA CAA AMS CZT
29	14 56	B: SOD NUR WNG BDV; C: CZT

Solar Flare Effects (sfe)

02	13 51	- 13 58	MPO
05	04 25	- 04 46	MMB KAK HTY
09	04 57	- 05 04	LNP
18	01 30	- 01 52	HTY LNP
22	14 10	- 14 41	WNG BDV
27	02 53	- 03 03	LNP
27	11 42	- 11 54	MPO

Reporting Observatories: SOD DOB NUR WNG NGK VAL HAD DOU CLF MMB GCK AQU EBR COI SPT FRD KAK HTY KNY LNP PMG MPO GNA CAA AMS CZT KGL

NOTE: SPT = San Pablo (Toledo)

R A D I O P R O P A G A T I O N Q U A L I T Y I N D I C E S
April 1983

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	4.3	3.1	7.9	6.2	6.6
2	4.4	4.2	7.9	6.3	6.6
3	3.3	3.9	2.4	3.9	4.6
4	4.5	3.0	3.0	4.6	5.3
5	5.3	3.9	5.2	4.2	4.7
6	5.7	3.2	4.9	4.7	4.2
7	5.4	2.2	6.4	4.5	5.6
8	4.5	2.8	5.0	2.9	4.3
9	6.1	4.7	8.4	6.1	5.9
10	4.0	5.0	2.3	4.6	5.5
11	5.6	7.3	2.8	5.9	5.8
12	5.0	7.2	6.6	5.9	6.1
13	5.4	5.4	8.3	5.3	5.8
14	4.4	3.9	2.6	4.3	5.1
15	3.9	3.0	2.5	4.0	4.5
16	4.5	4.8	7.1	6.0	6.2
17	4.1	4.7	4.3	5.7	4.8
18	6.2	6.5	6.8	6.6	5.7
19	5.9	7.1	6.8	7.0	6.9
20	5.6	6.8	4.9	7.0	6.9
21	5.5	6.4	3.5	7.3	5.9
22	6.7	6.5	5.9	6.9	5.3
23	7.1	7.3	5.5	7.2	5.8
24	5.9	4.1	5.0	5.5	4.9
25	5.2	5.6	4.9	6.2	6.9
26	4.9	4.5	3.7	4.5	4.5
27	5.5	5.5	4.8	5.9	5.3
28	5.9	6.8	8.0	5.3	5.6
29	5.7	6.1	7.7	5.2	6.0
30	5.1	4.7	5.7	4.4	5.7
MEAN	5.2	5.0	5.4	5.5	5.6

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

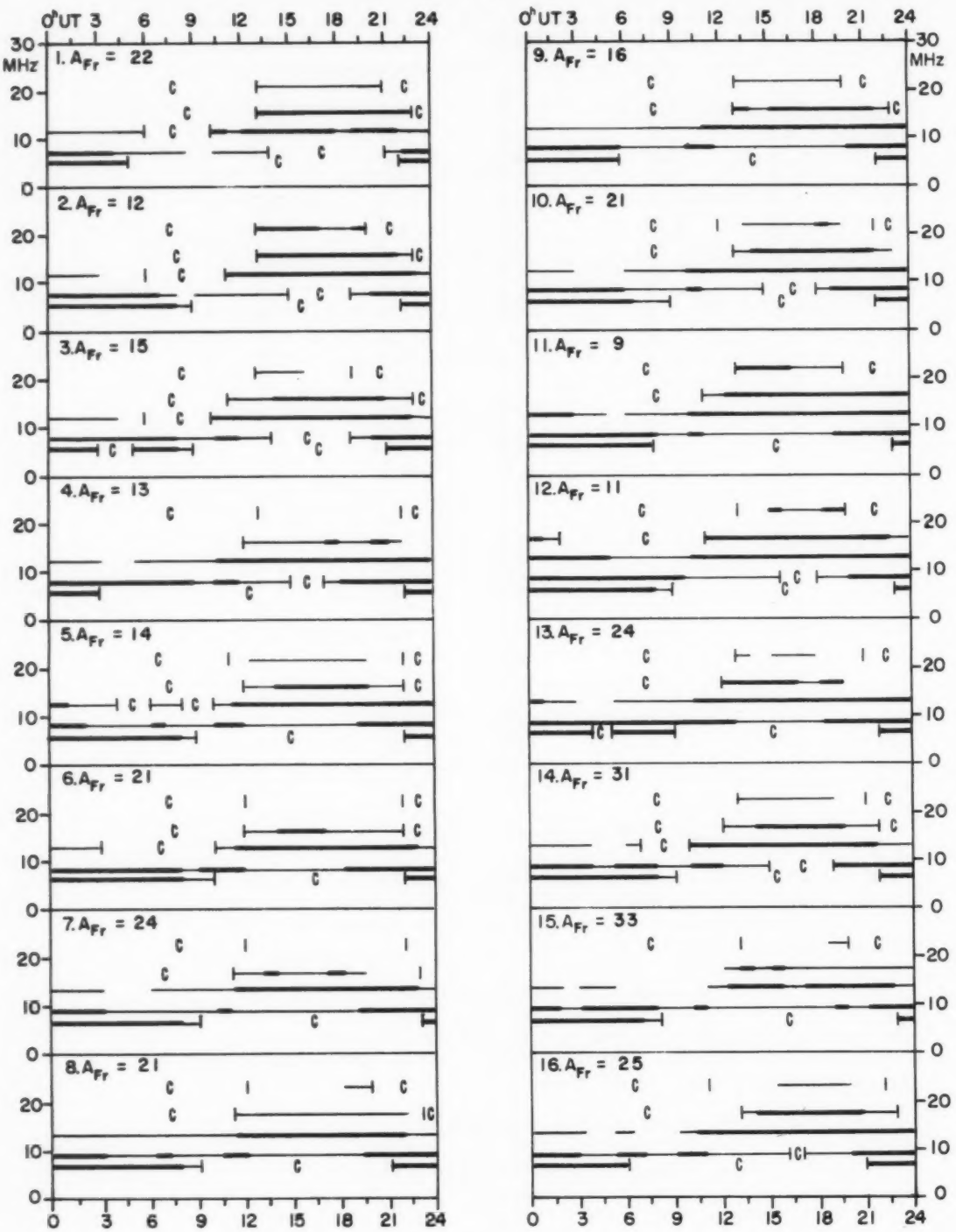
The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

Scale for Quality Indices

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

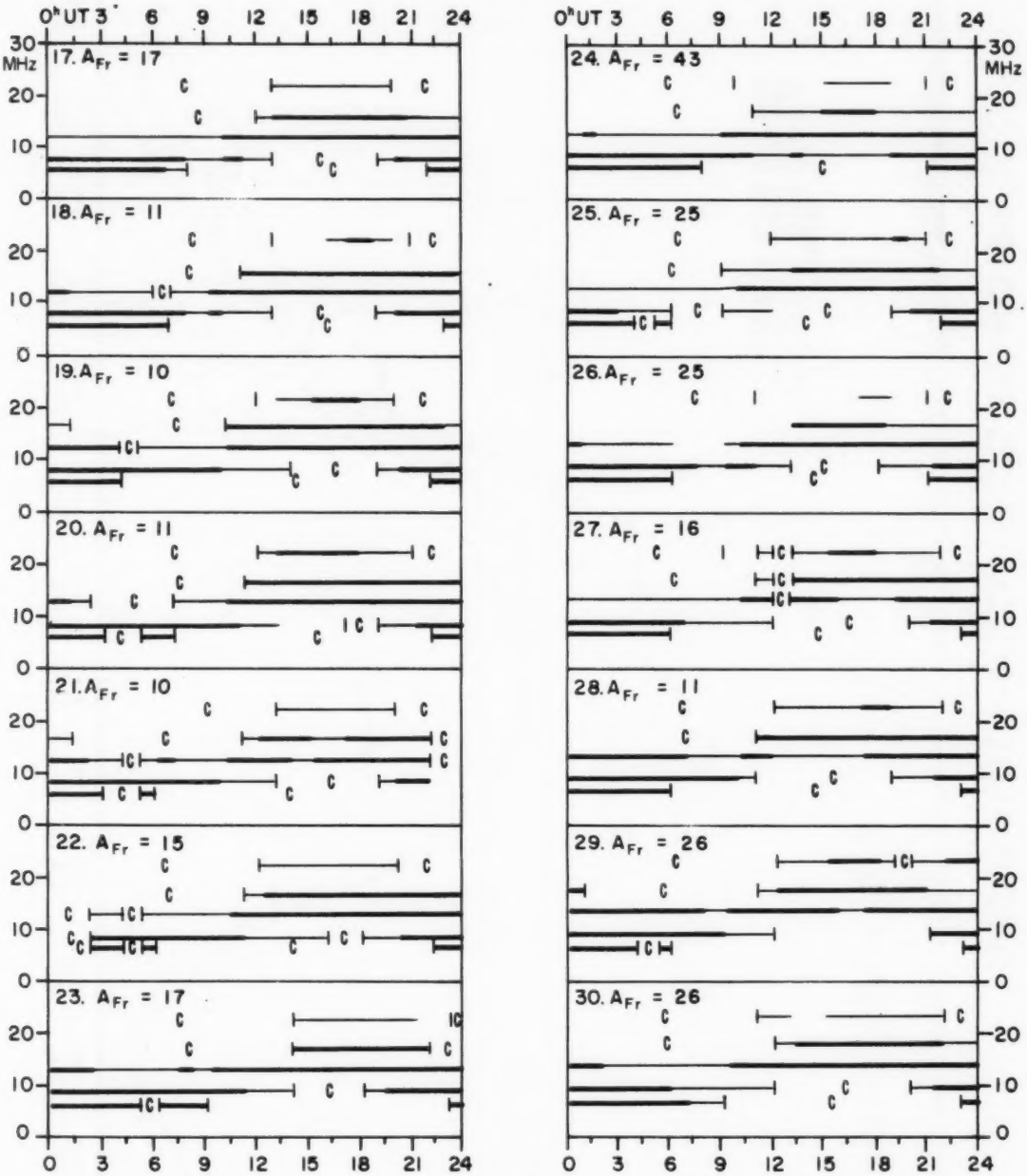
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

APRIL 1983



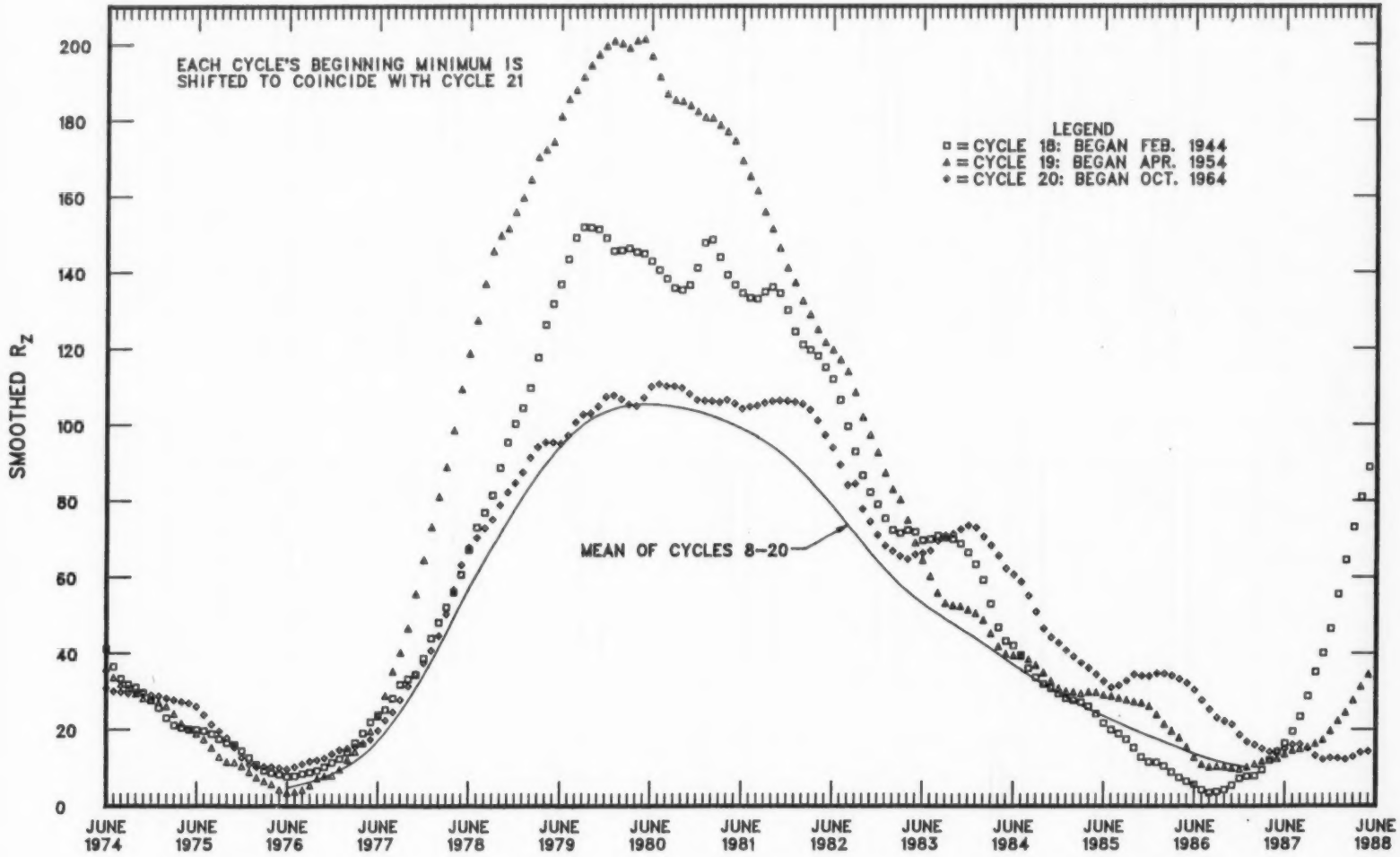
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

APRIL 1983



Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Norddeich-New York circuit are represented above. Heavy solid lines represent field strengths $\geq$ -12 dB above 1 μV/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μV/m and -40 dB above 1 μV/m are represented by the fine line.

SUPERPOSITION OF CYCLES 18, 19, AND 20



SGD 466 Part I (Prompt)

LATE DATA

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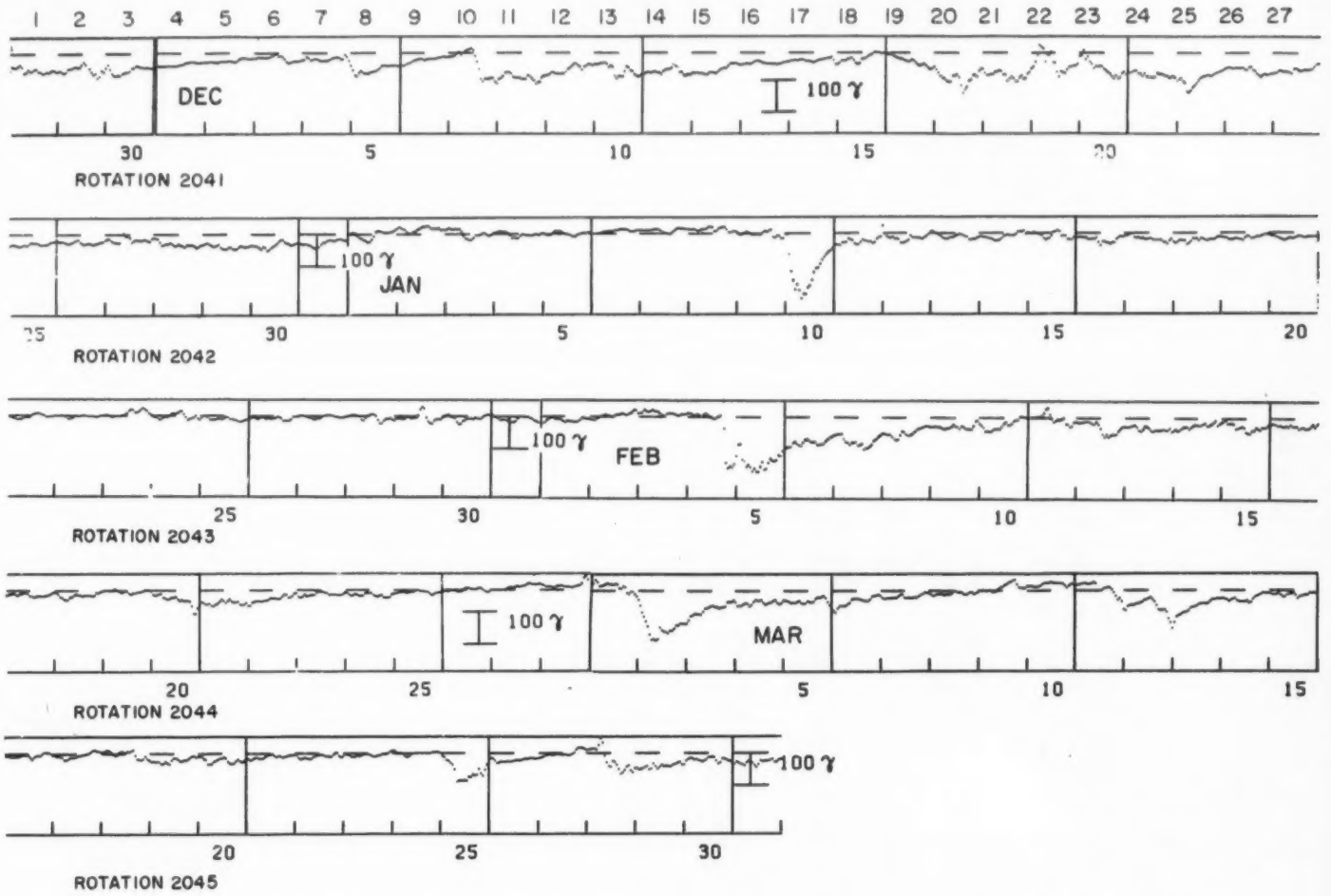
GEOMAGNETIC ACTIVITY INDICES

Hourly Equatorial Dst

by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

to month.

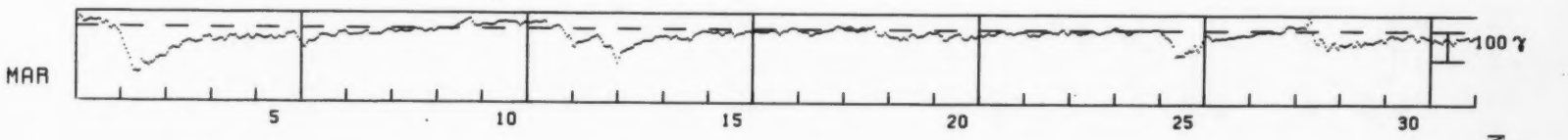
HOURLY EQUATORIAL Dst VALUES (PROVISIONAL)

MARCH 1983

NASA/GODDARD SPACE FLIGHT CENTER

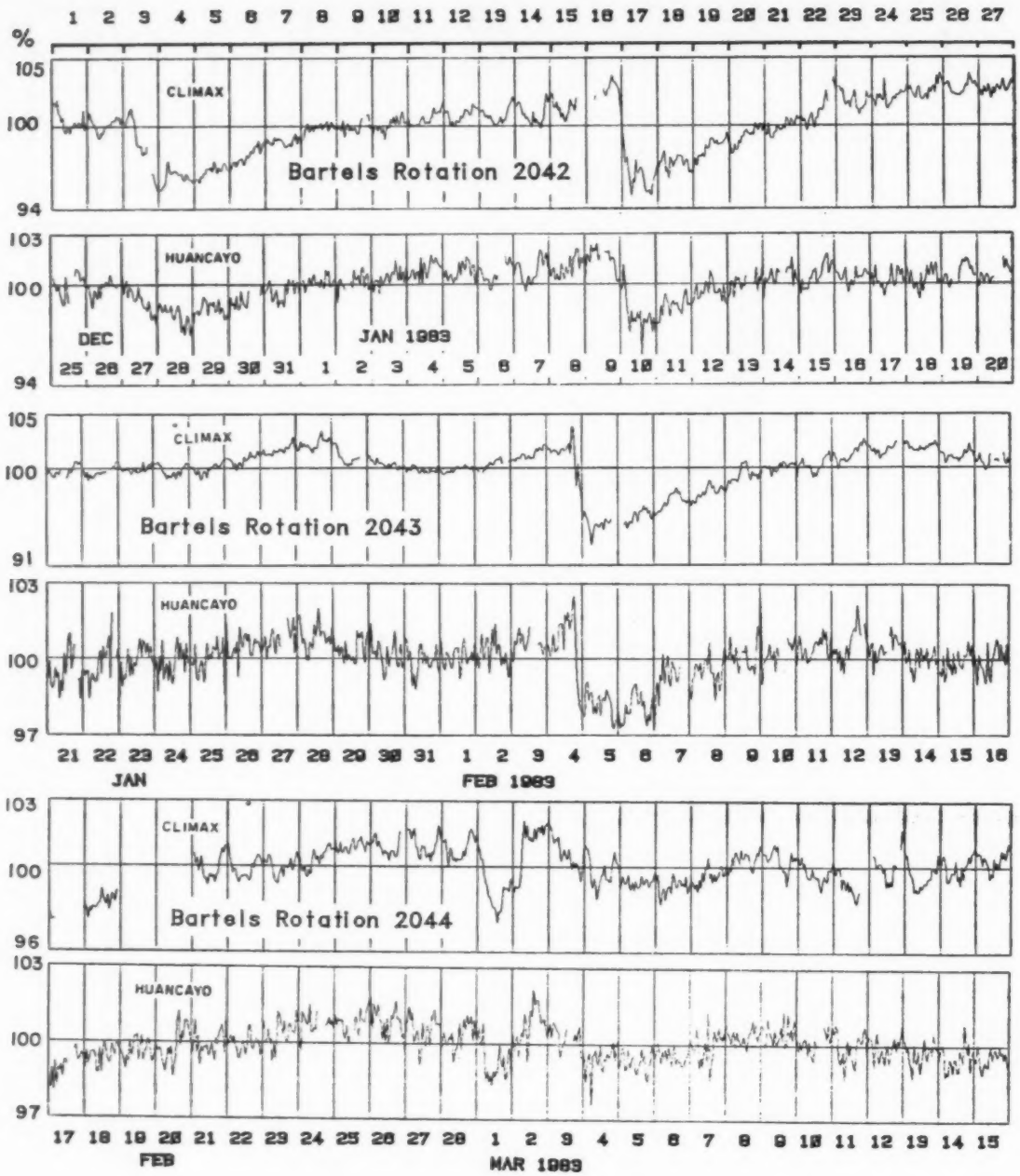
(Time-UT) (Units-Gammas)

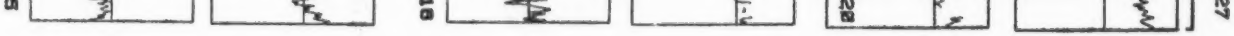
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	22	33	26	13	15	17	20	24	19	20	19	22	19	7	6	14	13	-7	-10	-2	-3	-11	-18	-29
2	-46	-68	-80	-95	-111	-136	-153	-149	-154	-150	-114	-122	-126	-127	-132	-123	-123	-116	-107	-107	-101	-102	-103	-101
3	-91	-78	-75	-70	-72	-73	-74	-65	-55	-53	-50	-46	-45	-50	-50	-55	-51	-50	-46	-35	-34	-35	-29	-36
4	-47	-47	-45	-41	-38	-40	-49	-43	-34	-28	-31	-31	-28	-37	-42	-40	-36	-36	-31	-28	-37	-42	-38	-31
5	-30	-32	-35	-38	-37	-37	-34	-31	-38	-41	-39	-32	-35	-37	-34	-25	-20	-22	-18	-16	-23	-36	-45	-53
6	-62	-68	-55	-47	-46	-48	-46	-41	-36	-27	-25	-25	-25	-27	-30	-32	-32	-33	-26	-17	-16	-14	-12	-16
7	-23	-26	-24	-23	-23	-22	-22	-21	-17	-12	-12	-22	-23	-22	-23	-22	-21	-23	-16	-13	-10	-6	-7	-7
8	-12	-16	-14	-11	-9	-11	-13	-12	-11	-11	-8	-1	-2	-5	-4	-6	-11	-12	-9	-5	-5	-11	-8	-9
9	-1	1	-1	-2	-1	0	-4	-5	-2	4	9	11	16	19	24	27	31	33	19	9	7	7	7	13
10	13	14	12	11	11	12	15	20	23	23	23	25	23	22	22	22	22	20	15	8	14	13	21	15
11	17	18	21	22	23	19	20	22	26	21	0	-2	1	6	7	10	8	2	-7	-18	-30	-25	-35	-59
12	-63	-50	-45	-45	-45	-42	-40	-39	-36	-30	-29	-26	-22	-29	-36	-47	-60	-62	-62	-60	-68	-88	-100	-116
13	-100	-82	-77	-75	-70	-68	-67	-63	-55	-52	-51	-48	-43	-41	-40	-41	-42	-39	-33	-27	-29	-26	-26	-27
14	-24	-27	-29	-35	-30	-27	-24	-32	-35	-36	-36	-35	-32	-39	-36	-27	-20	-17	-14	-11	-7	-9	-8	-9
15	-10	-13	-14	-11	-9	-15	-21	-19	-12	-11	-9	-8	-15	-25	-19	-16	-15	-13	-14	-6	-8	-6	-9	-9
16	-7	-3	-9	-11	-10	-10	-10	-8	-5	-3	-5	-5	-11	-18	-11	-6	-5	-6	0	4	3	3	1	-4
17	-5	-8	-7	-9	-12	-20	-21	-17	-12	-10	-12	-9	-6	-5	-4	-3	-1	0	4	9	11	7	0	4
18	4	7	10	8	4	-2	-7	-4	4	7	5	1	6	4	8	11	-6	-18	-19	-21	-17	-9	-17	-22
19	-26	-25	-27	-26	-28	-34	-32	-26	-31	-34	-22	-15	-14	-18	-24	-23	-21	-21	-17	-12	-8	-7	-12	-9
20	-9	-9	-17	-20	-34	-35	-31	-26	-23	-20	-16	-15	-12	-16	-27	-32	-33	-31	-24	-19	-25	-26	-23	-16
21	-17	-22	-19	-14	-11	-16	-17	-16	-12	-8	-5	-3	-2	-8	-12	-8	-3	-14	-12	-9	-7	-6	-6	-5
22	-7	-15	-20	-17	-14	-17	-19	-19	-13	-9	-6	-5	-4	-6	-9	-9	-10	-11	-4	2	1	-8	-14	-9
23	-2	-4	-5	-11	-12	-12	-7	-10	-7	-3	-2	-2	-4	-8	-11	-11	-7	-7	-3	-2	-3	0	5	8
24	8	3	0	2	-1	-8	-13	-11	-7	-1	-1	1	0	1	-1	1	0	0	-1	3	2	3	3	0
25	-9	-13	-22	-25	-31	-37	-51	-90	-86	-84	-85	-83	-86	-73	-74	-66	-70	-67	-49	-64	-71	-52	-36	-27
26	-15	-18	-24	-32	-30	-26	-23	-29	-26	-27	-27	-24	-22	-22	-23	-21	-18	-19	-17	-15	-16	-17	-18	-16
27	-14	-12	-9	-6	-4	-6	-7	-6	-3	-4	-6	-6	-5	-5	-7	-7	-3	1	10	16	15	15	12	5
28	9	12	14	13	10	24	45	32	-9	-30	-41	-43	-25	-28	-37	-50	-65	-60	-52	-42	-38	-54	-60	-47
29	-46	-51	-49	-47	-43	-40	-51	-48	-33	-41	-49	-43	-36	-41	-33	-40	-42	-38	-34	-33	-29	-27	-30	-36
30	-24	-19	-15	-16	-21	-19	-22	-24	-28	-24	-20	-13	-13	-11	-14	-25	-34	-30	-16	-13	-21	-24	-26	-28
31	-35	-27	-31	-34	-36	-39	-30	-25	-21	-31	-38	-44	-35	-23	-27	-25	-25	-24	-21	-20	-29	-28	-22	-20



126
Late
Jan-Mar 83

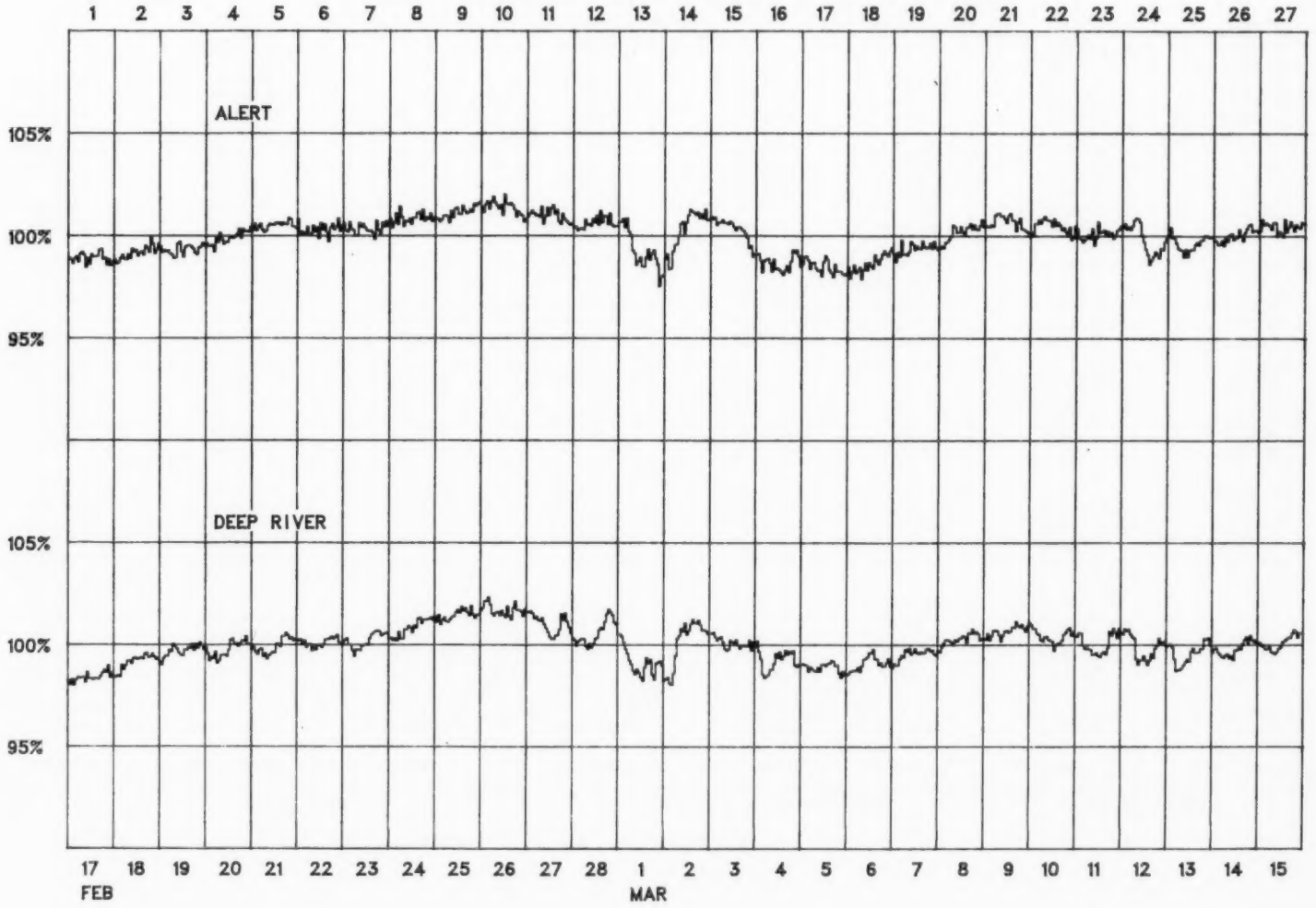
COSMIC RAY INDICES
(Neutron Monitor)





COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2044 (February 1983–March 1983)



COSMIC RAY INDICES

	March 1983				February 1983		January 1983	
	ALERT	DEEP RIVER	CLIMAX	HUANCAYO	CLIMAX	HUANCAYO	CLIMAX	HUANCAYO
Day	Average (cts/h)/100	Average (cts/h)/300	Average (cts/h)/100	Average (cts/h)/100	Average cts/h)/100	Average (cts/h)/100	Average (cts/h)/100	Average (cts/h)/100
1	6575.5	6200.3	3628.3	1733.0	3560.4	1732.8	3444.0	1713.0
2	6646.0	6258.7	3705.8	1758.6	3577.7	1735.4	3445.5	1713.1
3	6645.9	6258.3	3691.8	1751.1	3609.7	1741.9(38)	3450.6	1717.3
4	6536.5	6204.5	3662.1	1736.1	3612.5	1742.3	3465.8	1725.4
5	6523.0	6182.0	3643.2	1734.0	3380.4	1700.6	3474.6	1723.1
6	6535.5	6192.9	3637.6	1737.9	3406.2	1698.1	3474.4	1721.3
7	3583.1	6221.4	3654.1	1745.2	3454.6	1716.4	3477.7	1723.6
8	6636.7	6267.6	3682.9	1752.2	3482.5	1722.4	3492.2(36)	1727.7
9	6668.5	6291.9	3682.0	1753.9	3539.5	1733.5	3537.1(30)	1735.8
10	6657.0	6278.2	3658.9	1747.6	3567.9	1737.5(38)	3325.0	1679.3
11	6631.1	6253.8	3640.7(36)	1745.0	3573.1	1739.1	3353.3	1687.3
12	6614.2	6245.5	3581.5	1745.2	3611.5	1742.1	3392.0	1702.4
13	6602.1	6224.8	3655.0	1741.1	3624.8	1739.7	3420.8	1710.8(38)
14	6626.0	6239.1	3669.9	1737.6	3635.2	1731.9	3444.6	1718.0
15	6655.5	6257.9	3682.9	1737.2	3606.3	1729.4	3485.5	1719.4
16	6650.5	6273.1	3677.5	1732.9	3583.7	1730.6	3511.8	1717.1
17	6654.0	6280.2	3685.2	1735.4	3584.0(10)	1728.8	3517.4	1714.0
18	6680.8	6308.7	3705.5	1748.9	3993.8	1736.3	3536.0	1715.8
19	6692.2	6307.9	3730.8	1749.7	---	1739.8	3541.4	1720.9
20	6683.7	6327.5	3735.1	1751.5	---	1743.5	3540.0	1719.6(38)
21	6700.0	6346.5	3729.8	1750.8	3668.1	1745.0	3560.9	1722.6
22	6714.3	6359.1	3741.0	1753.0	3665.1	1744.6	3554.1	1727.7
23	6732.4	6372.7	3738.3	1749.8	3668.5	1752.8	3564.3	1729.5
24	6725.6	6384.7	3741.0	1753.3	3682.0	1758.8(38)	3560.8	1728.3
25	6728.5	6400.7	3786.2	1770.0	3703.0	1759.9	3563.0	1730.7
26	6637.8	6312.8	3716.4	1746.1	3701.8	1760.5	3594.1	1739.7
27	6682.1	6328.4	---	1749.5	3707.3	1756.0	3625.2	1744.9
28	6721.9	6373.5	---	1756.9	3700.1	1751.9	3646.3	1747.2
29	6713.1	6401.6	---	1761.6			3604.2	1738.0
30	6709.4	6405.9	---	1760.0			3580.3	1733.8
31	6743.0	6387.3	---	1756.2			3560.4	1730.1
MEAN	6655.1	6295.1	3688.1	1747.8	3615.1	1737.3	3507.1	1721.8

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

P I O N E E R X I I
SOLAR WIND

November 1982

DATE Nov '82	TIME (UT)	ESV (°)	U_{H+} (km/s)	N_{H+} (H^+/cc)	T_{H+} (x10^6 K)
1					
2					
3					
4					
5					
6	VENUS UNDERGOING SUPERIOR				
7					
8	CONJUNCTION.				
9					
10	NO DATA ACQUIRED.				
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22	1255		351.	25.2	.0399
23					
24	1024		356.	35.5	.0246
25	1236		328.	36.0	.0366
26	1208		362.	7.56	.106
27	1242		416.	21.0	.296
28					
29	1226		666.	15.4	.271
30	1343	164.	590.	29.4	.028

INTERNATIONAL* (R_I) RELATIVE SUNSPOT NUMBERS

Day	1982 Final Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	92	258	168	145	63	70	50	55	115	132	80	88
02	94	241	174	115	57	83	41	68	124	164	88	125
03	112	232	175	151	46	94	33	68	146	143	75	132
04	109	221	177	137	58	104	42	81	176	120	100	137
05	112	219	163	112	63	111	39	97	160	109	100	137
06	86	230	165	117	64	108	32	128	141	55	76	174
07	94	226	146	130	69	115	33	144	117	54	98	175
08	97	232	140	131	89	127	42	150	115	55	86	184
09	98	211	116	132	47	142	61	161	94	54	102	152
10	85	181	122	138	53	147	110	155	81	88	109	166
11	46	158	119	152	58	138	146	157	86	87	112	171
12	52	156	135	142	75	144	187	138	78	92	83	194
13	51	162	155	133	78	139	219	113	81	98	98	172
14	58	142	153	136	58	137	222	100	104	88	116	160
15	81	134	140	37	52	125	246	100	129	71	116	166
16	76	111	156	122	69	128	263	86	133	65	100	140
17	111	120	180	108	76	136	272	93	127	54	108	118
18	139	103	168	91	89	134	270	105	107	33	117	102
19	143	107	167	87	110	134	234	97	117	56	122	79
20	134	119	160	93	112	139	192	77	104	70	118	63
21	134	120	153	91	98	143	138	79	102	95	131	87
22	121	100	146	109	121	146	99	90	95	100	141	88
23	93	97	144	138	107	116	74	71	97	128	120	96
24	70	120	122	145	110	112	27	79	109	145	96	100
25	82	128	152	149	88	92	25	101	118	142	75	122
26	119	136	147	150	117	94	29	98	138	135	73	116
27	125	154	182	126	130	49	22	115	133	131	71	126
28	168	163	179	90	119	36	19	132	132	103	74	120
29	216		169	85	112	32	23	134	144	101	82	98
30	211		162	79	77	38	38	144	160	96	76	79
31	237		132		82		60	120		73		69
Mean	111	164	154	122	82	110	106	108	119	95	98	127

*International sunspot numbers have replaced the Zurich values since January 1981.
The yearly mean sunspot number equaled 115.9 in 1982.

DAILY SOLAR FLUX AT 2800 MHz (10.7 CM) ADJUSTED TO 1 AU

ALGONQUIN RADIO OBSERVATORY, OTTAWA

Day	Jan 82	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
01	179.9	284.8*	231.3	172.2*	151.7	134.2	106.5	123.4	184.3*	205.2	159.6	167.8
02	177.2	279.7*	228.3	172.0*	147.4	135.1	106.9	138.2*	168.7*	209.4*	154.5	166.3
03	176.1	272.9*	230.1	169.9	147.7	141.5	109.4	153.5*	171.0*	197.0A	147.4	181.6
04	170.4	252.8*	238.3*	158.2	144.7	158.2*	111.5	167.3	188.1*	182.3*	143.4	194.5
05	165.5	245.2	245.4*	159.9*	148.7	156.6*	114.1	180.9	179.4	163.9	136.4	195.9*
06	166.8	245.2	230.0*	165.2	153.0	149.6*	121.3	201.2	172.1	151.9	142.1	210.4
07	166.9*	239.9	228.3	164.0*	151.0	158.6*	128.2*	219.6	176.8	140.2	142.3	244.3
08	156.9	245.1*	207.1*	162.1*	150.8	167.3	150.3*	217.5*	178.5	136.9	144.8	241.7*
09	164.4	231.7	192.2	167.3*	139.8	177.4	176.6*	212.5	179.2	137.4	147.5A	258.6
10	145.7	213.7	178.9*	177.1*	130.7	196.0*	203.5*	209.5	165.6	134.8	152.9	273.5*
11	136.3	211.1*	178.2	178.7*	132.3	224.2	226.4*	205.0*	158.3	137.3	154.1	259.3*
12	132.4	204.0*	181.2	177.5*	132.3	238.3*	239.7*	195.2*	152.5*	136.4	164.9	251.1
13	127.5	194.9*	185.5	170.9	129.8	240.2	252.6*	182.9*	151.3	143.9	161.2	239.0
14	130.5	185.3	201.3	157.9	132.2	240.8	269.2*	176.8	147.4	140.4	159.5	235.6
15	136.3	180.3	207.6*	152.2	132.1	235.8	274.0	173.0	149.0*	134.1	157.0*	221.9
16	146.7	170.5	227.7	148.2	139.0	210.6*	269.4*	161.4	147.3	129.8	163.3	213.2*
17	152.6	162.5	230.4	145.9*	142.2*	206.0*	273.3	165.1	147.0*	130.1	158.0	200.5*
18	167.6	165.7	226.8	147.0	146.8	200.7*	247.2*	166.4*	143.2	132.8	170.2*	186.5
19	169.4	170.9*	219.7*	145.1	155.9	207.5	234.7	159.2	142.6*	136.7	182.3	176.8*
20	167.0	171.3	217.0	144.2	155.6*	207.1	196.5	144.7	146.9	146.2*	189.2	159.2
21	163.3	165.2	212.4	145.2	165.4*	210.7	173.7*	138.6	145.4	161.4	200.9	149.4
22	152.9	163.7	213.7	156.9*	158.8	197.2*	149.5*	138.8	146.2	168.2	231.1*	150.1*
23	148.0	173.1	202.4	175.2	155.7*	187.3	128.5	141.2	152.6*	177.3*	196.1	157.0*
24	149.1	185.9*	189.0	181.0	144.8*	168.2	117.8	142.9	165.4*	190.9	172.9	166.8
25	169.3*	184.1	189.9	182.6*	145.7	159.1*	108.2	158.5	170.3	196.8*	164.8	170.6
26	182.7*	204.0	192.8*	178.3	158.0	142.3	102.1	166.4	187.3	193.5	168.8*	168.7
27	197.2	222.1	195.4*	167.3	171.5*	127.6	97.8	180.4	191.4	187.7*	158.6	166.2
28	234.7	224.0	200.6	161.0*	171.3*	123.1	96.4	181.4	196.9	181.4	160.3*	157.0
29	267.0		198.0	155.6	170.9*	111.7	97.5	183.4	204.6	170.9*	161.4	147.3
30	284.5		194.5*	149.8*	142.8	108.5	112.4	174.5	202.4	166.7	164.8	142.5
31	289.1		184.1		136.7		114.4	175.0*		165.1		134.4
Mean	173.4	208.9	208.3	162.9	147.9	177.4	164.8	172.1	167.1	160.9	163.7	193.2

A = interpolated value.
*Adjusted for burst in progress at time of measurement.
The yearly mean 2800 MHz flux adjusted to 1 AU equaled 175.1 in 1982.

E R R A T A

International Sunspot Numbers and 2800 MHz Solar Flux.

Each of the three 12-month tables of International Relatvie Sunspot Numbers and 2800 MHz Solar Flux, which appeared in "Solar-Geophysical Data" issues 463, 464 and 465, Part I, page 8, contain either all or some of the incorrect values identified below.

Please use the table on the facing page to correct the following sunspot numbers:

(1) all daily and monthly mean values for Jan, Feb and Mar 1982; and

(2) the number shown for Jul 16, 1982.

Use the table on the facing page to correct the following values of the 2800 MHz solar flux:

(1) all daily and monthly means for Jan, Feb and Mar 1982;

(2) the fluxes shown for Oct 2, 3, 4, 20, 23, 25, 27 and 29, 1982;

(3) the entry on Nov 9, 1982; and

(4) the Dec 1982 monthly mean.

H-alpha Filtergrams.

In "Solar-Geophysical Data" issue 465, Part I, pages 67 and 68, the H-alpha filtergrams for Mar 26 and 27, 1983, were interchanged. Also in the same issue, the San Fernando H-alpha filtergrams were not corrected for the P angle listed at the top of each page; these photographs appear on pages 45 (Mar 4), 66 (Mar 25), and 68 (Mar 26).

CAUTION: In the tables entitled "Regions of Solar Activity," several users have found discrepancies in our matchings of sunspot area measurements (SELDADS data base) with the calcium plage regions and Mt. Wilson sunspot groups. Until we can review the computer code and fine tune the program, please heed the caveat. We sincerely apologize for the problems this has caused.

SOME OTHER SOURCES OF DATA

Data Available: Some data available in publication form are cited here. A list is given, along with addresses of the responsible institutions. The WDC-A for Solar-Terrestrial Physics publishes the Toyokawa, Ottawa and Penticton radio data in its monthly publication, *Solar-Geophysical Data*. The WDC-A for Solar-Terrestrial Physics also receives most of the periodicals when they become available.

Belgium: *Bulletin d'Observations: Activite Solaire - Observations Radioelectriques Solaires - 600 MHz (Humain, Belgium)* Observatoire Royal de Belgique, Ave. Circulaire 3, Brussels, Belgium (monthly since 1962)

Canada: *Solar Noise Observations at 2800 Mc/s (Ottawa - ARO) and 2700 Mc/s (Penticton - DRAO)* Series C Monthly Report, National Research Council, Radio Astronomy Section Ottawa 7, Ontario, Canada (since 1947)

France: *Carte Synoptiques de la Chromosphere Solaire* Observatoire de Paris, 92 Meudon, France (monthly since 1931)

Germany: *Daily Mean Value of Solar Flux Density* Heinrich-Hertz Institut, 1199 Berlin-Adlershof, Rudower Chaussee 5, G.D.D. (monthly since Jul 1957)

Italy: *Solar Phenomena - Monthly Bulletin and Photographic Supplement* Osservatorio Astronomica di Roma, Monte Mario, Rome, Italy (monthly since 1958) *Osservazion Solari, Solar Flux and Distinctive Events* Osservatorio Astronomico Di Trieste (quarterly since 1965) *Solar Observations made at Catania Astrophysical Observatory* (annually since 1967)

Japan: *Monthly Report of Solar Radio Emission* Radio Astronomy Section, Research Institute of Atmospherics, Nagoya University, Toyokawa, Japan (since 1956) *Solar Activity Chart* WDC-C2, Toyokawa Observatory, Nagoya University, Toyokawa, Japan (annually since 1968) *IAU Quarterly Bulletin on Solar Activity* Tokyo Astronomical Observatory, Mitaka, Tokyo, Japan (since 1978)

Netherlands: *Geomagnetic Data* IAGA Bulletin No. 12 (1932-69), No. 32 (since 1970) IUGG Publications Office, 39 ter, Rue Gay-Lussac, Paris V, France (annually)

Taiwan: *Report on Sunspot Observations* Taiwan Provincial Weather Bureau Observatory, Taipei, Taiwan (quarterly since 1957)

USSR: СОЛНЕЧНЫЕ ДАННЫЕ *(Solar Data)* USSR Academy of Science (monthly since 1958) КОСМИЧЕСКИЕ ДАННЫЕ *(Cosmic Data)* (monthly since 1962) *Magnetic Fields of Sunspots* (bimonthly since 1964)

USA: *Preliminary Report and Forecast of Solar-Geophysical Activity* Space Environment Services Center, NOAA, Boulder, Colorado 80303 USA (weekly) *Solar-Geophysical Data* NOAA, Boulder, Colorado 80303 USA (monthly since November 1956)

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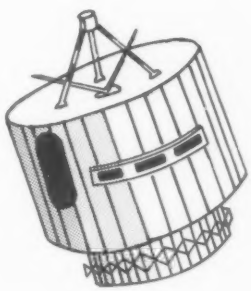
DATA ANNOUNCEMENT

SPACE ENVIRONMENT DATA from the SMS & GOES SATELLITES

The Space Environment Monitor instrument package on-board all SMS/GOES satellites has provided magnetometer, energetic particle, and soft X-ray data continuously since July 1974. Two SMS/GOES satellites operate simultaneously in the Earth's equatorial plane. They travel in geosynchronous orbit (6.67 Earth radii) and are generally located at 75° and 135° west longitude. This trajectory allows the detectors an unobstructed view of the Sun for all but the few dozen hours per year that the Earth eclipses the Sun. The time resolution for all three sensors is approximately 3 seconds, which permits one month's data from each sensor to be stored on a single 9-track, 1600-BPI, binary tape. Plots are available on microfilm.

MAGNETOMETER

A twin fluxgate spinning sensor allows representation of the Earth's magnetic field in three mutually perpendicular components: H_p, H_e and H_n. H_p is parallel to the satellite spin axis, which is itself perpendicular to the satellite's orbital plane. H_e lies parallel to the satellite-Earth center line and points earthward. H_n is perpendicular to both H_p and H_e, and points westward. Field strength changes as small as 0.2 gamma can be measured.



PARTICLE DETECTOR

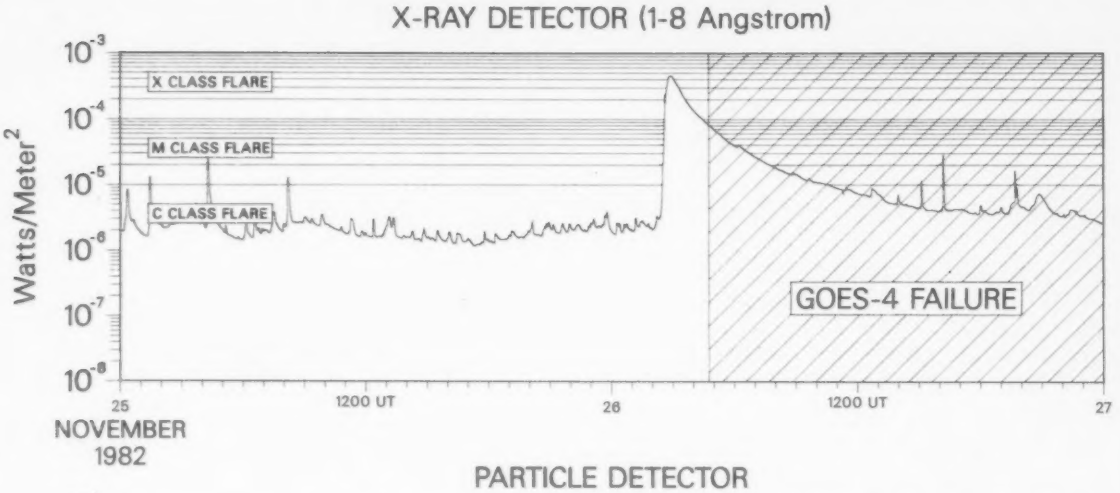
Solid state detectors with pulse height discrimination measure protons from 0.8 to 500 MeV, alpha particles from 4.0 to 392 MeV, and electrons with kinetic energies greater than or equal to 2.0 MeV. Since solar protons and alpha particles in these energy ranges accelerated in solar flares can reach the vicinity of Earth, they pose a hazard to manned space flight and to high-altitude aircraft. They can as well significantly affect the high-latitude ionosphere.

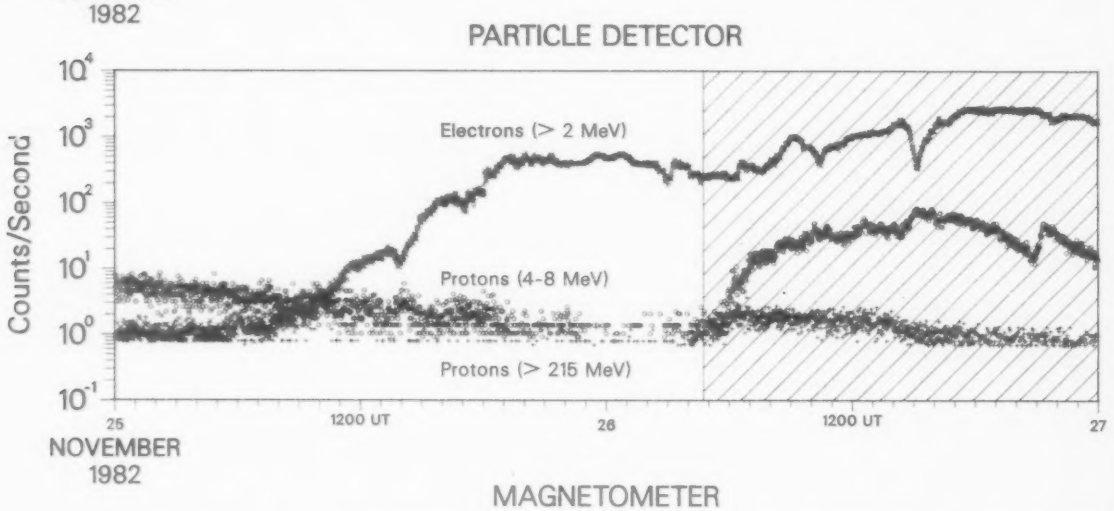
X-RAY DETECTOR

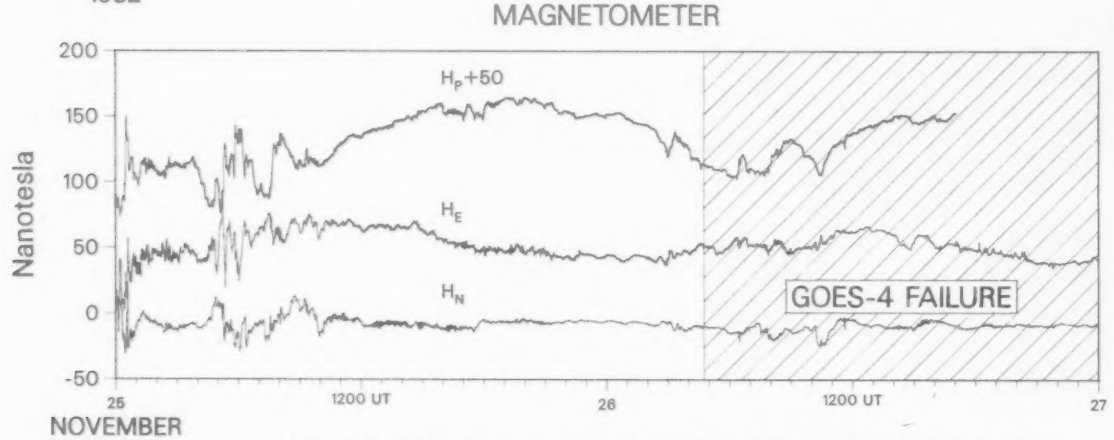
Ion chamber detectors provide whole Sun fluxes for the 0.5-to-4 and 1-to-8 Angstrom X-ray wavelength bands. These observations furnish a sensitive means of detecting the start of solar flares and thereby changes in the dayside ionosphere.

Address your inquiries to Mrs. Viola Miller, National Geophysical Data Center, NOAA code D631, 325 Broadway, Boulder, Colorado 80303, USA (Telephone (303) 497-6136, FTS 320-6136).

GOES-2 SPACE ENVIRONMENT MONITOR
(108° West Longitude)







This plot was created from the SMS-GOES data archive at the National Geophysical Data Center to display the near-space environment coincident with the failure of the GOES-4 satellite. See the inside back cover of this issue of "Solar-Geophysical Data" for more information concerning this valuable archive.